

Performance Work Statement

Remedial Action Contract: TBD
Southwest Jefferson County Mining Superfund Site
Remediation of OU1 Residential Soils
Jefferson County, Missouri
CERCLIS ID: MON000705443

May 2019

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1 BACKGROUND AND PURPOSE

The purpose of this Performance Work Statement (PWS) is to describe the tasks necessary to complete the remedial action for lead-contaminated residential properties within Operable Unit (OU) 1 at the Southwest Jefferson County Mining (SWJC) Superfund Site (Site). All actions shall be conducted consistent with the Environmental Protection Agency, Region 7 Record of Decision (ROD) documents for these Sites, relevant EPA policies (including but not limited to the EPA Office of Solid Waste and Emergency Response [OSWER] 9285.7-50; Superfund Lead-Contaminated Residential Sites Handbook¹, August 2003 [Handbook]), and this PWS. Definitions of key terms used in the PWS are included in Enclosure A: Key Terms. The ROD for OU1 was signed on September 12, 2012 and can be found at the link below:

https://archive.epa.gov/region07/cleanup/npl-archive/web/pdf/sjcms_ou1_rod.pdf

The Remedial Action (RA) is being conducted pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), as amended by the Superfund Amendments and Reauthorization Act (SARA), and National Contingency Plan (NCP) requirements. The Contractor shall furnish all necessary services to meet the performance standards and successfully accomplish the requirements of this PWS, including labor, materials, equipment, site management, office support and incidental items.

2 SCOPE OF WORK

The EPA estimates 600 properties may be eligible and available for remediation during this current action. The objective of this contract is to reduce the human health risk of exposure to lead by removing lead-contaminated material from assigned properties. The OU1 ROD selected remedy for the Site includes the excavation and relocation of lead-contaminated materials (mine waste, soil, gravel, crushed rock, vegetation, ground cover, etc.) from properties provided and restoration of said properties. Any residential property with one or more non-drip zone area with surface soil concentration equal to or greater than 400 parts per million (ppm, also expressed as milligrams per kilogram or mg/kg) for lead is eligible for the remedial action. Once a property is identified for remediation, up to 12 inches of soil must be removed from all areas that have lead concentrations at 400 ppm or greater, drip zone included. If the residual concentration of lead is greater than or equal to 1,200 ppm at 12 inches below ground surface (BGS), an approved warning barrier shall be placed in the excavation prior to backfilling. The warning barrier must be durable, highly visible, permeable and non-erodible material. Please note that the remediation contractor shall not be responsible for sampling the excavated properties. The EPA will perform sampling and analytical procedures to make these excavation decisions and will follow the EPA and the Site Uniform Federal Policy for Quality Assurance Project Plan (UFP-QAPP), Quality Assurance Surveillance Plan (QASP), related guidance, and relevant SOPs. The property shall then be restored to pre-excavation conditions with backfill materials that contain less than 100 ppm lead (while also meeting the additional backfill requirements in Task 12). Satisfactory completion of the above will result in achieving the performance goal of obtaining individual property closeouts with the property owners and the EPA. See Enclosure B: List of Properties Subject to Remediation for a complete list of properties currently eligible for remediation. **Note: the EPA cannot guarantee access to these properties and may add, remove or reprioritize properties for any reason at any time.**

For the soil repository (repository) management tasks, the performance goal is to maintain and manage the

¹ <https://semspub.epa.gov/work/HQ/175343.pdf>

repository in a manner which stabilizes the waste, minimizes future settlement and covers the existing mine waste piles while maximizing slope stability and minimizing erosion. The Contractor shall prevent the release of contamination via surface water, sediments, seeps, vehicle track out or airborne dust. In addition, the Contractor shall control access, inspect, maintain and repair access roads leading to and within the repository to address wear and tear due to haul truck traffic and, within the repository, degradation by weather.

3 PROJECT MANAGEMENT

The Contractor shall adhere to the following when developing their Project Management Plan (PMP), schedule and methods for conducting remedial activities. Enclosure D: Significant Project Deliverable Dates and Milestones provides a table of significant project deliverable dates and milestones.

3.1 Execution of Work

- Fieldwork shall be confined to the following times:
7:00 am – 6:00 pm, Monday – Saturday, except national holidays
- Excavation of materials at properties shall be conducted from March 1 through November 25. Backfill shall be completed within 21 calendar days after excavation start and all backfill shall be completed no later than December 15. Other field work may be allowed from December 16 through February 28, as weather and conditions allow. This includes the following activities:
 - Seed/sod may be applied, and any repairs or punch list items may be conducted and may be required, at properties as weather and conditions allow.
 - Operation, maintenance, and repair of the repository may be performed and may be required throughout the year, as weather and conditions allow.
- The Contractor shall obtain written approval from the Contracting Officer (CO) to modify the stated work schedule due to adverse weather/site conditions when applicable or to conduct fieldwork on a Sunday or national holiday.
- The Contractor shall document any work stoppage/delays due to adverse weather conditions and include documentation and/or supporting rationale for the delay in the Daily/Monthly Report.
- The Contractor shall conduct activities in a manner that minimizes adverse impacts to the property owners and the general community and promotes good public relations.
- The Contractor shall honor local customs and practices such as local fairs, funerals, weddings, parades, processions, etc., and schedule work around them to minimize interference with these local events.
- The Contractor shall inspect and maintain documentation on haul trucks at the beginning of each work day for safety issues and any signs of lead-bearing material on/in the bed, undercarriage, tires, etc.
- All equipment used for hauling contaminated material shall be thoroughly decontaminated prior to being de-mobilized from the Site, moved to a clean process (backfill, grading and restoration) within the Site or released from service. This includes but is not limited to any local subcontract hauling service that may perform odd jobs after work hours and on holidays or weekends. Decontamination procedures shall be documented (protocol followed, photographs of equipment, date decontaminated, personnel involved, vehicle identification numbers, make/model etc.).
- The Contractor shall ensure that none of its subcontractors, vendors, or employees are potential responsible parties (PRP) at this Site and that their use or employment at this site poses no conflict of interest.
- The Contractor shall maintain current contact information, credentials, certifications, etc. accessible to the Contracting Officer Representative (COR) or EPA Representative for each crew.
- The Contractor shall notify the CO and the COR and/or other pertinent regulatory authority in writing within 24 hours of non-compliance with any federal, state and local laws and regulations as they pertain to this contract.

- The Contractor and the EPA shall conduct monthly project meetings on the first Tuesday of every month from the start of remedial activities. Attendance at these meetings shall consist of, at a minimum, the EPA COR(s) and/or EPA Representatives and the Contractor's project manager and site superintendent. Other personnel may attend these meetings as needed. Meetings shall be conducted at the Contractor's field office, and the Contractor shall provide teleconference capabilities should required attendees not be available to meet in-person. Meetings shall address site progress, issues encountered and future planning. The CO/COR reserves the right to forego monthly project meetings for any reason. The Monthly Report described below shall be provided to the EPA, via email, by close of business the Monday prior to these meetings. Property folders that have been completed in the previous month shall be submitted at the monthly meeting or at a mutually agreeable time should the monthly meeting be cancelled. Site walk schedules, meetings with property owners, etc. shall be scheduled around these monthly meetings to ensure key personnel are available.

3.2 Quality Assurance and Control

The Contractor shall provide qualified key personnel to conduct inspection of materials, equipment, construction activities and to confirm work on properties is completed in accordance with this PWS. The Contractor shall ensure that key personnel are familiar with and have access to the specific requirements of the contract and of this PWS.

3.3 Health and Safety Program

The Contractor shall be responsible for initiating, maintaining, and supervising health and safety precautions and programs in connection with this PWS. The Contractor shall develop a Health and Safety Plan (HASP) that ensures compliance with all applicable health and safety laws, regulations, and other requirements, including, but not limited to, Occupational Safety and Health Administration (OSHA) federal and equivalent OSHA state regulations, city and county ordinances and codes, uniform fire codes and federal and state Department of Transportation (DOT) regulations. Compliance with these regulations is required for all personnel working under the contract, including all subcontractors.

The Contractor shall establish all reasonable safeguards for safety and protection, including posting warning signs and other notices, of potential hazards for the property owners, residents and other users of adjacent properties. The Contractor shall advise residents to stay away from excavated areas to the extent possible. The Contractor shall maintain a safe environment for workers, residents and the general public at all job locations.

If an allegation of non-compliance with the HASP is made against the Contractor in connection with the performance of work, the Contractor shall notify the EPA CO and the EPA COR in writing within 24 hours of the allegation. Documentation in the form of photographs, field notes, etc. is required to determine credibility of the allegation.

The Contractor shall be responsible for coordinating the dissemination and exchange of Safety Data Sheets and other hazard communication information required to be made available to all employees at the Sites in accordance with requirements of federal, state and local ordinances, laws or regulations. The CO has the right to require the Contractor to remove or bar any employee or subcontractor for failure to comply with Site health and safety requirements.

The CO has the authority to suspend work, at the Contractor's expense, if the COR determines that unsafe practices are being conducted at any time.

The COR has the authority to stop any unsafe activity being performed on site that is a violation of the approved HASP at no cost to the EPA.

If a Contractor's fuel storage area is located within the Site, secondary containment around fuel storage areas is required even if fuel tanks do not have the minimum storage capacity necessary to trigger Spill Prevention, Control and Countermeasure (SPCC) regulation requirements.

4 SCHEDULE/MILESTONES

4.1 Schedule of Residential Cleanup

The Contractor shall propose a schedule for property cleanups associated with this contract for EPA approval in the PMP. As part of the PMP, the Contractor shall submit a General Schedule which shall include a timeline and projected number of properties to be completed each month for the duration of the project. In addition, the Contractor shall ensure that the PMP is regularly updated and that the Monthly report includes the anticipated schedule for conducting both the current and the next month's operations. The detailed plan shall include a list of upcoming yards to be opened, excavated and restored (those in which final grade has been achieved, seeded, etc. – see Section 6 Deliverables for details) as well as properties that have been closed out. Additionally, the Contractor shall provide daily reports with details of the planned activities for that day along with accomplishments from the previous day. All timelines, schedules and plans shall be posted in an area accessible to the EPA COR.

Site walks shall be scheduled to be conducted Tuesday through Thursday, between the hours of 9 AM and 6 PM with advance written notice provided to the EPA COR at least two work-days in advance of the requested date for the site walk(s). If a property owner is unavailable between 9 AM and 6 PM Tuesday through Thursday, the contractor shall notify the EPA COR in writing to determine a mutually agreeable alternate site walk date and time.

The Contractor shall generally prioritize the residential cleanups based on the following system:

1. The presence of children less than 72 months of age
2. Properties with higher lead concentrations, followed by
3. Properties grouped in the same geographic area to minimize frequency of disturbance.
4. EPA redefined priority

Circumstances may arise in which the EPA is made aware of unique properties that should be remediated in an expedited fashion. If a property that does not require remediation (e.g., lead concentration in surface soil is <400 ppm) has been placed on the list or the property access agreement is no longer valid, the Contractor shall notify the EPA COR in writing, shall not remediate the property and shall record the facts in the Daily/Monthly Report. **The EPA reserves the right to add properties to, remove properties from, and/or re-prioritize the property list (Enclosure B: List of Properties Subject to Remediation) for any reason.** The Contractor is responsible for obtaining access to remediate at all properties assigned prior to initiating any site work. Generally, the Contractor will be assigned groups of approximately 50 properties.

4.2 EPA Furnished Resources

The EPA will provide the following resources to the Contractor:

- Applicable property records, reports, data and information in the available existing Site files (e.g.,

- property sketches)
- Pre-excavation sample results and post-excavation confirmation sample results
- Access to the EPA policy and guidance documents

4.3 On-site Personnel

All on-site personnel are required to complete 40-hour OSHA Hazardous Waste Operations and Emergency Response (HAZWOPER) training, OSHA 10-hour Construction Outreach Training and be current with the HAZWOPER 8-hour annual refresher prior to reporting for work on-site. Training certificates/documentation and all other required documents for on-site personnel shall be maintained on-site for EPA review at any time. Copies of all certificates demonstrating training and certifications that key personnel are complete and current shall be furnished to the EPA COR within 30 calendar days of contract award or within 30 calendar days of a new hire but before reporting for work on-site.

5 PERFORMANCE CRITERIA AND REQUIREMENTS

5.1 Tasks

For this contract, remediation of residential properties involves three distinct phases: 1) pre-excavation activities, 2) excavation activities, and 3) post-excavation activities. Each of these phases has various requirements that are described in the following subsections. There may be multiple milestones and/or deliverables for each performance objective (see Section 6 for a list of deliverables and Enclosure D: Significant Project Deliverable Dates and Milestones). Final decision authority regarding milestones and acceptable deliverable completions resides with the EPA COR and CO. The EPA has the authority to request any Contractor project documentation for review at any time, up to and including during final contract closeout.

5.2 Pre-Excavation Activities

5.2.1 Task 1 – Plans

Prior to the issuance of the Notice to Proceed, the Contractor shall complete and obtain the EPA's acceptance of the following plans (see Section 6): PMP, Quality Management Plan (QMP), UFP-QAPP, HASP, SWPPP, Truck List and Borrow Area Excavation and Restoration Plan (BAERP).

5.2.2 Task 2 – Local Office

The Contractor shall maintain workspace (local office) within the city limits of the City of Hillsboro, Missouri for the duration of the contract, beginning at the onset of pre-excavation activities. The workspace shall include a reception area, high-speed internet access, have parking that can accommodate up to five vehicles at one time and be publicly accessible. The workspace shall include sufficient room for planning and meeting with local citizens and EPA personnel, separate from the Contractor's work area. In addition, it shall include bathroom facilities that are compliant with local and state regulations.

5.2.3 Task 3 – Road Agreements

The Contractor shall establish a formal, written agreement with all relevant governing bodies, municipalities and/or communities regarding truck traffic prior to commencing work at a property as described in Section 6 Deliverables.

5.2.4 Task 4 – Properties, Site Sketches and Access Agreements

A map outlining the area of the properties requiring remediation is included as Enclosure C: Site Location Map. The EPA will provide a web address (or other available format) to download site sketches which provide graphical depiction of the residential properties, analytical data, and the footprints of

permanent structures. The residential properties subject to this PWS require remediation of areas exceeding 400 ppm lead as shown in the property sketch. Some sketches are not to scale, may not clearly indicate the areas qualifying for remediation and may require updating if the pre-excavation site walk reveals changes to the property. **If a site sketch does not accurately identify the property or the contaminated portions, the Contractor shall immediately notify the EPA COR to have the sketch corrected or clarified prior to the commencement of excavation activities.**

The EPA may have obtained a signed access agreement for the property prior to commencement of excavation activities. However, if an access agreement for remediation has not been signed or ownership has changed, it is the responsibility of the Contractor to attempt to acquire a signed access agreement. If after mailing, calling, and conducting three in-person attempts, the Contractor is unsuccessful in acquiring a signed access agreement, the Contractor shall provide a detailed record of the attempts to the EPA, and the EPA will determine whether to provide another property as a replacement. In cases where a legal property purchase contract is in place on a property, the Contractor shall notify the EPA and the Contractor shall obtain access from both the current owner and the prospective buyer.

The Contractor shall document in writing any/all agreements made with property owners within the scope of this PWS (see Section 5.3.1 and 5.4.2). The agreements shall be included in the property folder and described in the Daily/Monthly Reports. The agreement shall be signed by both the property owner and a Contractor representative and clearly state all agreements reached. For example, these agreements may include areas to be left undisturbed or areas requiring specific restoration actions. The Contractor shall also fulfill the conditions stated in the agreements. If a property owner insists that areas containing contamination not be remediated (e.g., flower beds, landscaping, etc.) the Contractor shall: 1) notify the EPA COR of the proposed change; 2) illustrate such areas on a second site sketch; 3) include the signed (property owner) agreement form with an explanation why the area was not remediated, and 4) place the documentation in the on-site records (property folder). The Contractor shall provide the EPA a copy of all such site sketches in the property folder. Occasionally, the EPA may enter into agreements with property owners regarding the property remediation. If such a written agreement exists, it will be provided to the Contractor prior to beginning excavation at the relevant property. The Contractor shall not establish any documentation or agreement with a property owner that exempts the Contractor from his/her obligation to complete remediation or restoration of the property or deliverables stated in this PWS. All agreements made with property owners shall be provided to the EPA once the agreement is signed and shall be included in the property folder. Please note that agreements made with property owners shall not obligate the EPA to increase the contract price and/or shall not constitute an improvement/enhancement to the property.

When conducting the work defined by this PWS, the Contractor shall communicate to the residential property owners the following general principles:

1. The goal of the remedial action is to remove lead-contaminated material that poses a risk to human health, not to enhance or improve the property; and
2. Decisions made on property-specific items (e.g., to remove a tree or dig around it) are based on the best interest of the EPA and the health of the community.

5.2.5 Task 5 – Pre-Excavation Site Walks

The Contractor shall schedule the pre-excavation site walks at properties with the property owner or a property owner representative, previously designated by the property owner, prior to initiating excavation. The Contractor shall use the form provided in Enclosure E: Example Property Pre-Excavation Inspection Checklist (or another form approved by the EPA) to document pre-excavation conditions at each residential yard. The Pre-Excavation site-walk shall involve the following activities:

- Coordinating the date/time of site walk(s) meeting(s) with the availability of the EPA personnel, property owners and, as necessary, the EPA Technical Support (ETS),
- Scheduling site walks one to two weeks prior to initiation of excavation activities at each property,
- Keeping a list of scheduled pre-excavation site walks and notifying the EPA at least two work-days in advance of changes to the property site walk(s) scheduled, and
- Scheduling pre-excavation site walks Tuesdays through Thursdays between the hours of 9 AM and 6 PM.

The Contractor shall ensure that site walks are not scheduled more than two weeks in advance of the estimated date of mobilization to the property, so that information generated during the site walk is not lost or outdated.

If a site walk cannot be scheduled Tuesday through Thursday between the times specified above, the Contractor shall notify the EPA COR and request approval to conduct the site walk outside those days and times for a day and time when the homeowner or a designated property owner representative is available. Site walks scheduled outside the specified day/time window may be conducted solely by the contractor and the property owner without an accompanying EPA representative, if prior approval is granted by the EPA COR.

The purpose of the pre-excavation site walk is to discuss the proposed excavation activities, identify areas of concern and ensure the site sketch is legible and accurate. The Contractor shall use the site sketch as a guide in determining which areas of the property shall be excavated. **The EPA reserves the right to modify the area of excavation based on changes in site conditions and/or any new information received during the site walk.** During the pre-excavation site walk, the Contractor shall discuss entrances/exits onto the property with the EPA and property owner. If entrances/exits require access to adjacent properties, the Contractor shall obtain approval from the EPA COR and a signed property access agreement for the adjacent property granting access to or through the property from every affected property owner, including city and county municipalities.

The Contractor shall take photographs and video, which display the date the visual support was taken, of the pre-excavation state of the property and all locations from the street (alleys, crossing sidewalks, etc.) used to access the property. If there is ever disagreement as to the pre-excavation condition of the property and the photographic and/or video evidence is insufficient to make a determination of fault, the Contractor shall be responsible for addressing the complaint and making the necessary repairs at **no cost to the EPA**. Photographs and video shall be of sufficient quality and resolution to capture the necessary detail of the property condition. Blurry, out of focus and over/under exposed images will not be accepted and shall result in the Contractor assuming responsibility for damages. The Contractor shall maintain all photographic and video evidence on-site and available to the EPA and property owner for viewing upon request.

Generally, the property owner is responsible for removing personal items from the area to be remediated. The Contractor shall explain to the property owner what items need to be moved from excavation/access zones during the pre-excavation site walk. In cases where personal items remain on the property that would interfere with the excavation, the Contractor shall temporarily relocate (with the property owners' written permission) the personal items (e.g., stacked wood, swing sets, lawn items, items the property owner is unable to move, etc.) in order to complete the work unless otherwise informed by the EPA. As required for excavation and approved in writing by the property owner, the Contractor shall clear and dispose of, or relocate, limited amounts of bushes, shrubs, and small trees within the area of excavation. Disposal of these materials shall be at an approved county or municipal waste facility, NOT at the EPA designated contaminated soil repository unless prior approval has been granted by the EPA COR. Lead

contaminated areas accessible to children such as under decks, porches, patios and inside garages or outbuildings shall require excavation. However, permanent structures (houses, pools, patios, decks, sheds, etc.) shall not be removed. Sidewalks and driveways may require excavation; however, prior written approval from the EPA COR and the property owner is required on a case-by-case basis. Removal of large trees or large tree stumps or concrete pads is generally not necessary.

5.2.6 Task 6 – Identify Utilities, On-site Sewage Systems and Other Buried Structures

The Contractor shall be responsible for contacting Missouri One Call (Dig- Rite) at 1-800-344-7483 or 811 or <https://www.molcall.com/> to locate and mark all utilities prior to beginning excavation activities.

The Contractor shall perform its due diligence to interview property owners, contact utility workers and formally document and locate utilities and buried structures that are not located by Dig-Rite. This includes interviewing homeowners during the pre-excavation site walk and conducting a thorough site inspection, including but not limited to locating gas lines, electric lines, irrigation systems, on-site sewage systems and subsurface drainage systems that are part of the property and are not documented by the utility line locator system. The Contractor shall contact the EPA in advance when encountering an area where standard excavation could cause harm, such as around septic tanks or near utilities (fiber optic lines, gas and water mains, sewers, etc.). In such cases, limited or no excavation may be authorized by the EPA. Areas not excavated due to utilities or where any contamination exceeding the cleanup criteria is left in place shall be documented by the Contractor on the As Built Site Sketch, photographed and kept in the property folder with an “Areas Not Addressed Summary” describing portions of the property and circumstances where soils exceeding cleanup criteria were not remediated due to existing barriers. The Contractor shall repair or replace, in accordance with local, county, and state regulations, any utility, regulated systems or structures damaged during these activities.

On-Site Wastewater Treatment Systems (OWTS): Jefferson County requires specific tasks and activities to successfully remediate lead contaminated residential yard soils in areas with an OWTS. The following steps outline the work that shall be required in OWTS areas to allow remediation of the drain field and/or reinstall the OWTS to its original state. Background information on OWTS can be found at: https://www.epa.gov/sites/production/files/2015-06/documents/2004_07_07_septics_septic_2002_osdm_all.pdf.

The Contractor shall communicate information about the OWTS and the remediation process to the property owner, the Jefferson County Code Enforcement Division, the EPA and relevant Contractor employees/subcontractors. The Contractor shall invoice for **authorized** OWTS work under the Landscaping CLIN in accordance with the steps below.

Step 1 – Identify On-Site Septic Systems: During the Pre-Excavation Site-Walk, the Contractor shall determine if an OWTS is located on the property to be remediated and note the location, type of OWTS (conventional or alternative) and condition of the OWTS, if known. Once an OWTS is identified, Step 2 below is required.

Conventional, gravity fed lateral line, OWTS’s that are determined to be functioning and compliant with current code only require excavation to within six inches of the lateral line. This soil buffer shall allow the majority of the lead contaminated soils to be removed without compromising or damaging the lateral lines. It is the Contractor’s responsibility to locate components of the conventional OWTS, which may require hand digging to determine depth and location and ensure that excavation does not damage the system. **The Contractor shall be responsible for any damages caused to an OWTS.** At no point should a conventional OWTS be completely exposed during excavation.

Alternative OWTS’s, which includes components differing from conventional systems, that are

determined to be functioning and compliant with current code require special handling and coordination with all parties. Often, these systems use shallow, fragile pressure/drip distribution pipes fed by pumps. These components do not allow for equipment traveling over or excavation around them without damage, so the piping is often recommended to be removed during excavation, as described in Step 3 below.

The Contractor shall document all information in the site-walk checklist and include notes for the remediation work crew to reference. The Contractor shall take photos/videos of the existing OWTS as part of the pre-excavation documentation. Additional photos/videos shall also be required when excavation is complete to document the condition of the OWTS before the area is backfilled. In the event the OWTS is determined to be outside the work area, the Contractor shall document this and notify the work crews to avoid the OWTS area without exception.

Step 2 – Notification to and Compliance with Jefferson County Code Enforcement:

All OWTS shall be inspected prior to excavation to determine if they are in good working condition. Before undertaking any work at the property, the Contractor shall contact the Jefferson County Code Enforcement Division (<https://www.jeffcomo.org/LandUse.aspx?nodeID=LandUse>) at 636-797-5310 regarding OWTS questions and to provide notification that earthwork will be occurring that will impact an OWTS. This includes excavation within or equipment traveling over an OWTS, including supply and lateral lines. The Contractor shall request a copy of the existing permit on file with the county and have the county complete an inspection of the existing OWTS.

If pre-existing issues are identified during inspection, e.g. if it is determined that the OWTS is failing and/or will require upgrades to meet county codes (i.e. conventional OWTS needs to be upgraded to an alternative OWTS), the Contractor shall notify EPA and inform the property owner that remediation is not possible until the OWTS is brought up to code by the property owner. The property owner is responsible for making repairs and the Contractor shall not excavate the property until the repairs are completed.

Should the property owner be unable/unwilling to complete the repairs/upgrades, the Contractor shall notify the CO and COR in writing and request an evaluation of alternatives for the property. Depending on the specific conditions at the property, it may be possible to complete a partial remediation which excludes the OWTS (including supply and lateral lines) with written homeowner consent. The homeowner would be required to disclose that lead contaminated soils were left behind in the area of the OWTS. In this circumstance, the Contractor shall avoid the OWTS area (including supply and lateral lines) without exception. This includes prohibiting any vehicle travel over the OWTS. Should the homeowner also refuse the option for partial remediation, the Contractor shall document the refusal in writing, and request a replacement property.

As required by County Code <https://www.ecode360.com/27891552>, the Contractor shall retain the services of a registered licensed contractor to perform **any** work on an OWTS. The Contractor shall use a registered contractor licensed with the county:
<https://www.jeffcomo.org/BuildingOtherResources.aspx?nodeID=BuildingDivision> .

Step 3 – Excavation and Disposal: The Contractor shall excavate the contaminated areas as described in the PWS; however, disposal of the old alternative OWTS lateral lines shall be handled separately from disposal of lead contaminated soils. Alternative OWTS lateral lines shall be disposed of in accordance with local, state and federal regulations for solid waste of this type. Lead contaminated yard soils shall be disposed of at the approved soil repository for the site. Conventional lateral line OWTS's do not require removal, as described in Step 1 above. Under no circumstance shall any sewage, septic

OWTS materials or other solid waste be disposed of at the soil repository. The Contractor shall be responsible for the appropriate handling and disposal of waste generated during this work in accordance with local, state and federal regulations.

If pre-existing issues with the OTWS are identified during excavation, the Contractor shall immediately report the issues in writing to the CO and COR for review. The Contractor shall demonstrate, within 24 hours of discovery, that their activities were not the cause of the issue. Upon review and confirmation that the issue was not caused by the Contractor, the EPA will allow invoicing of the repairs under the Landscaping CLIN of this contract. Note that prior to initiating any EPA **approved** work on an OWTS, the Contractor shall secure three bids from registered licensed contractors and obtain EPA CO and COR approval.

Step 4 – Soil Backfill: The soil backfilled into an area of an OWTS shall meet both the requirements of the PWS for quality backfill and the requirements of the County Code for septic OWTS's. Test results shall be made available to both the EPA and other relevant officials upon request. These results shall be included in the property folder for each relevant property.

Step 5 – Plumbing Installation and Reconnect: A registered licensed contractor shall be used to disconnect and reconnect the alternative OWTS, per county codes, and ensure the OWTS is functioning properly prior to final closeout of the remedial actions. Yard restoration work shall continue as specified in the PWS. Copies of all supporting documents shall be included in the property folders.

Step 6 – Documentation and Reporting: The Contractor shall document all OWTS work completed and costs incurred throughout the project. All OWTS related records shall be made available to the homeowner, EPA and/or County Officials upon request.

5.2.7 Task 7 – Initial Repository Preparation

The EPA currently has an agreement for a soil repository in St. Francois County at the Bonne Terre East Tailings (repository) in Bonne Terre, Missouri (see Enclosure M: Soil Repository Location). The Contractor shall comply with the Access Agreement, Environmental Covenant and/or other relevant accords between the Repository Owner and the EPA for the repository (see Enclosure N: Soil Repository Access Agreement). Prior to transportation, disposal, and consolidation of any waste at the repository, the repository shall require preparation by the Contractor for long term use and management. These activities include signing the road agreements with the local community, required by Task 3 and described in Section 6 Deliverables, and conducting a site walk with the EPA COR and repository owner to discuss the layout and use of the repository. The Contractor shall maintain access roads capable of supporting sustained heavy truck traffic to allow access and offloading of contaminated material and set up a vehicle decontamination zone. The Contractor shall maintain the access gate to prevent unauthorized use of the repository and ensure it is closed and locked when not in use by the Contractor. The Contractor, with the repository owner's permission, may elect to clear and grub areas, level the waste piles and expand the area of contaminated soil disposal in an incremental manner as necessary to accommodate ongoing disposal needs. However, contaminated soil disposal shall be limited to areas currently covered with mine waste and shall not extend to uncontaminated portions of the property per the technical direction of the EPA COR and the repository owner.

Downstream locations at the repository shall be protected from contamination by constructing, maintaining and supplementing, as necessary, all best management practices (BMPs) and containment structures throughout the duration of the residential soil disposal project. Stabilization of all impounded waste is considered an ongoing priority and shall be maintained, from start to finish of the project, utilizing BMPs

and basic engineering controls to prevent any downstream discharges from the project area resulting from storm water runoff, erosion and dust emissions. Furthermore, the BMPs shall be implemented to meet all provisions of the Clean Water Act under an approved SWPPP, required under Task 1 as a deliverable prior to a Notice to Proceed. Storm water shall be controlled by on-site sediment basins which may require some initial construction or modification to ensure adequate capacity, structural integrity and effectiveness, in addition to continued maintenance based on actual site conditions. BMPs shall be performed in accordance with the current Jefferson County Code, State of Missouri and Phase II Federal Storm Water Regulations at remedial action locations where land disturbances of qualifying sizes occur. BMP monitoring may be implemented by the EPA and any respective county/state jurisdictions during and shortly after precipitation runoff events for qualitative evaluations of the effectiveness of storm water and erosion control measures.

5.3 Excavation Activity Requirements

5.3.1 Task 8 – Recordkeeping

The Contractor shall create a daily written record of work progress for each day work is performed at the Site. An example format can be found in Enclosure H: Example Daily Report. On the first Monday prior to the monthly project meeting, the Contractor shall electronically submit a Monthly Report of all activities completed the previous month and detailed plans for the following month to the EPA COR(s) as described in Section 6. Monthly Reports shall be in Microsoft Word format. An example format can be found in Enclosure G: Example Format of Monthly Reports.

Generally, the Contractor shall contact the EPA each work-day to review the work completed the previous day as well as the work planned for the current day. The Contractor shall keep a record of each property completed which includes but is not limited to:

- Access agreements,
- Records of correspondence,
- Pre- and post-excavation site sketches and photo/video – each recorded on an individual property-specific digital video disc [DVD]. No additional data shall be collected or stored on that DVD,
- The final excavation areas and square footage totals,
- The estimated tons/cubic yards, number of truckloads and type of material removed from the property (if necessary, the **Contractor shall assume a conversion factor of 1.3 tons of excavated material per cubic yard**),
- An itemization of the dates and work performed at the property (site walk, excavation start and completion [with total volume removed], backfill start and completion (final grade achieved and ready for seed/sod is the backfill complete date, includes total volume backfilled), seeding/sodding (with square footage], and final restoration and closeout), and
- Sample results including drip zone and confirmation sampling results.

The Contractor shall input and maintain this data in a Microsoft Excel spreadsheet and in an EPA-provided database. The Contractor shall have Microsoft Word, Microsoft Excel, Microsoft Access, Adobe Reader, and a computer with high speed internet access at the local field office to complete this task.

The Contractor shall prepare, obtain and maintain all required permits and licenses for work involved in this project prior to starting excavation. With respect to permits, licenses, or any fulfillment of their substantive requirements, the Contractor shall notify the appropriate state and local agencies as to the nature and timing of activities to be performed.

The Contractor shall obtain data, maintain records, and prepare all reports and submissions required to satisfy the PWS and other regulatory requirements.

The Contractor shall document all correspondence with property owners, including those related to homeowner complaints. The Contractor shall use a standard form to track complaints. An example form is provided in Enclosure I: Example Property Owner Issues Form. The Contractor shall address each complaint individually and include a compilation of the complaints received within the reporting period in each Monthly Report.

The Contractor shall maintain all site-related documents in electronic format, hard copy and on media disk in the Contractor's site office. Upon EPA CO or COR request, the Contractor shall provide the EPA with hard copies and/or electronic copies of any site document.

The Contractor shall include photographs and video of the property for the pre-excavation, post-excavation and closeout condition of each property as well as documentation on any issue encountered during work at the property for each property in the Property Folder Submissions. Photographic copies shall be provided electronically in Joint Photographic Experts Group (JPEG) format on the property DVD. (Note: other video/photo formats may be accepted if prior written approval is obtained from the EPA COR.) The Contractor shall also provide copies of photos and video (digital video clips shall be provided in Moving Picture Experts Group (MPEG) or Windows Media Video (WMV format on the property DVD) taken of private, city and county roads at the end of each contract period in electronic format. (Note: other video/photo formats may be accepted if prior written approval is obtained from the COR.) The Contractor shall prepare, maintain and provide all records listed in Section 6 Deliverables.

5.3.2 Task 9 – Excavation of Properties

The objective of the excavation work is to remove lead-contaminated material greater than or equal to 400 ppm in areas delineated by the EPA and consistent with the RODs. For this action, excavation shall be performed to address lead-contaminated materials. For the purposes of this contract, the conversion rate of 1.3 tons per cubic yard shall be used.

The residential property area to be excavated shall not exceed one acre unless written authorization is granted by the EPA. In general, excavated areas shall be located within approximately 100 feet of an occupied or vacant dwelling as represented onsite sketches provided. Occasionally, the EPA may require additional excavation outside of the normal parameters of a property, such as play areas or gardens outside of a 100-foot perimeter from the home. The Contractor shall report any potentially contaminated soil (substances other than heavy metals from mining activities) to the EPA prior to initiating excavation (evidence of oil spills, strange odors, etc.). If during the excavation the Contractor identifies contamination by any other substance (e.g., fuel oil, solvents, asbestos tiles, etc.), the Contractor shall stop excavation and notify the EPA immediately. Generally, the Contractor shall not excavate in areas with dense vegetation (woods), unless authorized by the EPA COR. Additionally, the Contractor generally will not be required to remove soil beyond boundaries such as the end of a property, into a pasture or within a buffer zone or riparian corridor of a creek/river. Children's play areas such as swing sets and sand boxes shall be the Contractor's priority at a given property unless otherwise approved by the EPA COR.

The Contractor shall confine his/her activities to the residential property locations designated as requiring excavation, the soil repository and backfill source areas as determined by the Contractor and approved by the EPA. **Residential cleanup properties vary in size, shape, obstacles present and volume of contaminated material to be removed, and the EPA does not take these variables into account when assigning properties.**

The Contractor shall achieve the cleanup objectives at each property while taking the following factors into consideration:

Coordination with the EPA/ETS: The Contractor shall notify the EPA and ETS of both the scheduled start of each property excavation and when the Contractor is nearing the completion of soil removal at the property under the provisions as stated below. After excavation has been completed but prior to backfill placement, the EPA or ETS shall measure the lead concentration by taking confirmation soil samples to verify that the cleanup criteria are met. Sample collection, processing, analysis and reporting typically takes 1 business day during normal conditions. The contractor shall plan excavations with an expected analysis delay for up to 24 hours after the excavation is completed and the EPA/ETS has been notified. **Note that if a property is reported as excavation complete at the end of a normal workday that falls before a weekend or holiday, confirmation samples will be reported at the end of next normal workday (Monday through Friday, excluding holidays).**

Work Zones: Per the Site-Specific HASP, the Contractor shall establish “work zones” at all excavation sites and anywhere the contractor is operating equipment that is in public areas. Work zones shall be bordered with highly visible caution tape, impassible construction fence or other physical/visual barriers. In addition to these work zones, in Contractor controlled areas, the Contractor shall ensure the safety of the public and residents from hazards such as slip, trip and falls at all times while the Contractor is active and present at each area. The Contractor shall ensure safe access for all residents to and from their houses throughout the remedial process. The Contractor shall be held responsible for any contaminated material leaving the work zone of each respective property.

The Contractor shall avoid swinging machinery buckets over property lines and over uncontaminated areas (outside the work zone). When it cannot be avoided, the Contractor shall obtain written access from any affected property owner(s) prior to the work, expand the work zone to include the additional area, and protect the uncontaminated property (plastic sheeting or other barrier).

Standard excavations and confirmation sampling: The typical excavation is between the original ground surfaces to 12 inches BGS. Soil concentrations will be confirmed at the base of excavation by the EPA or ETS and the excavation area and depth shall be measured by the Contractor and the EPA or ETS. Once confirmed, excavation is considered complete and ready for backfill. If a soil concentration below 1,200 ppm for lead is not achieved at the base of excavation, a permanent demarcation barrier approved by the EPA COR shall be placed at the excavation base prior to the placement of backfill. The warning barrier must be durable, highly visible, permeable and non-erodible material.

Garden areas: In garden areas, excavation follows the standard excavation description above but, if the soil lead concentrations are equal to or greater than 400 ppm after excavation of the first 12 inches, **excavation shall continue to a final depth of 24 inches.** If the concentration at the base of the 24-inch excavation is not below 1,200 ppm as verified by the EPA or ETS, the Contractor shall place a permanent demarcation barrier approved by the EPA COR. Requests by property owners to move garden areas shall be forwarded to the EPA for approval *prior* to excavation.

Driveways and garage interiors – The Contractor shall excavate gravel driveways as described in the standard excavation above. Some garages may have contaminated gravel or dirt floors that require hand excavation and placement of gravel upon prior written approval by the COR and property owner. Heavy machinery may be used in garage interiors if prior approval is granted by the EPA and the property owner; however, the Contractor assumes all responsibility for damage caused by its own actions. Gravel specifications for backfill inside of a garage are the same as driveway specifications (see Task 12). Upon consultation and with prior written approval by the EPA and property owner, the Contractor may remove asphalt/concrete driveways which have deteriorated beyond repair and replace those structures

with gravel.

Asphalt or concrete driveways in good condition are considered impermeable and encapsulating of any mine waste they may cover. The EPA does not intend to replace maintained, paved/concrete driveways. If the Contractor damages asphalt or concrete driveways, the Contractor shall repair or replace the driveway with non-lead bearing material to the satisfaction of the homeowner at no cost to the EPA. Asphalt or concrete driveways that have been damaged by the remedial actions shall be repaired or replaced by the Contractor with materials agreed to by the property owner and documented on a property owner issue form such as the example provided in Enclosure I: Example Property Owner Issues Form.

Drip Zones – A drip zone is an area around the painted (or previously painted) exterior walls of a house or structure that receives the majority of the rain runoff from the house or structure. Drip zones vary in size from structure to structure but generally extend from 6 to 30 inches beyond the foundation of the residence. If the EPA-sampled drip zones are equal to or greater than a lead concentration of 400 ppm, then the drip zones around the entire structure shall be excavated and restored at any home that qualifies for soil remediation. Drip zone soils within any quadrant that qualify for excavation shall also be excavated as part of the quadrant excavation but the entire drip zone around the home shall only be excavated if it also is equal to or greater than a lead concentration of 400 ppm. The Contractor shall excavate the drip zones by hand to avoid damage to the house/structure by heavy equipment. If the Contractor uses machinery in or around drip zone areas, the Contractor assumes all responsibility and expense for damage caused by the Contractor's actions.

The technique of tapering or angling away from the foundation after excavating several inches BGS is an acceptable practice around sensitive or unstable structures. If the level of contamination in the drip zone remains equal to or greater than 1,200 ppm at 12-inches BGS, placement of an approved visual warning barrier shall be required. The Contractor shall document the location and dimensions of any contaminated material left in place and record the location and dimensions of the barrier placed at depth on the post-excavation site sketch prior to backfilling.

Under Decks and Unique areas: Excavation of soil beneath permanent structures shall not be performed in cases where these areas are inaccessible. However, some properties present unique areas that require excavation. If a deck/porch extends away from a building and is located in a designated, lead-contaminated area and the area underneath the deck is accessible to small children, the material under the deck shall be excavated. Examples of other unique areas include but are not limited to: gravel/dirt garage interiors, extensive landscape areas with tall retaining walls, extensive ground cover (ivy, etc), surrounding pool areas and along steep slopes. The EPA COR will make the determination of child accessibility and notify the contractor during the site walk or via email after reviewing the features of the property.

Uniform Excavation: Excavations are required to be of uniform depth across the surface area of a property. Standard practices require the use of an excavator of appropriate size for the property being remediated and/or hand tools. The use of a skid steer to excavate is not acceptable as this equipment tends to smear contaminated soils at the base of excavation and is difficult to control the depth of cut. A skid steer can, however, be used to shuttle soils from areas inaccessible by trucks to a truck load-out area. The Contractor shall not mechanically spread contaminated material onto clean areas and shall take all necessary precautions to prevent the spread of contaminated materials (plastic barrier, erosion control measures, etc.). If cross contamination or contamination spreading is identified by the EPA, the contractor shall remediate the areas affected at no cost to the EPA.

Property Damages: The Contractor shall excavate soil/gravel without causing damage to houses, sidewalks, curbs, driveways, utilities and other items at each property. The Contractor shall exercise

caution when excavating adjacent to permanent structures (houses, patios, pools, decks, walkways, retaining walls, etc.).

Damage to sidewalks, structures, possessions, landscaping, etc., and subsequent repairs shall be thoroughly documented as to the cause, effect and resolution by the Contractor. The Contractor shall strive to resolve property owner concerns about property damage to the property owner's satisfaction. **The Contractor is responsible for any damage to the property that occurs during performance of remedial activities, and the EPA will not reimburse the Contractor for any damage caused by the Contractor.**

If the Contractor modifies the property (e.g., dismantles the fence) or damages the property (e.g., leaves ruts in the driveway, hits trees or other objects with excavator, etc.), the Contractor shall restore the area to its prior state or reach a settlement with the property owner at no cost to the EPA. The Contractor, in the event of a settlement with a property owner, shall use a settlement form which shall be provided by the Contractor to the property owner with any and all agreements established between the Contractor (not the EPA) and the property owner. Any settlement agreements shall also be included in the property folder for that property. An example form is included in Enclosure L. Settlements made with property owners shall not obligate the EPA to increase the contract price and/or shall not constitute an improvement/enhancement to the property.

Live Plantings: The Contractor shall perform excavation around trees, bushes and shrubs to be left in-place in a manner that leaves, to the extent possible, the entire root/bulbs intact and avoids damage to the roots. Hand digging is recommended by the EPA to prevent damage or disturbance to tree and other plant root systems. Guides for work around trees are available through multiple on-line sites and at <https://extension2.missouri.edu/g6885>. In general, the Contractor shall use the following table as a guide to determine the minimal critical root zone where additional care during excavation is required:

Critical root zone radius distances calculated by tree diameter at breast height.

Tree diameter	Critical root zone radius	Total protection zone diameter, including trunk
2 inches	2 feet	4+ feet
6 inches	6 feet	13.5 feet
20 inches	20 feet	42 feet
46 inches	46 feet	96 feet

Excerpt from Oregon State University Extension Service, December 2009 "[Tree Protection on Construction and Development Sites](#)"

The Contractor is responsible for documenting and communicating issues, concerns and pre-existing conditions of live plantings within the excavation areas to both the property owner and the EPA. If damages to a tree or other live planting are documented by the COR or property owner and/or there is no photograph/video evidence and/or documentation of a pre-existing condition of the planting, the Contractor shall be responsible for the removal, replacement and/or compensation to the property owner for the loss of the plant or tree.

Residual Contamination: Prior to backfilling, the Contractor shall document the location and dimensions of any contaminated material left in place and record the location and dimensions of any barrier placed at depth on the As-Built post-excavation sketch for each property.

Timely Sampling Data Entry: Within five calendar days of achieving the cleanup criteria or placing a barrier at depth at a property, the EPA or ETS shall enter the final base excavation data into the EPA-provided database. This data shall also be provided to the Contractor. The Contractor shall place sampling data on a post-excavation site sketch within two calendar days of receiving sample results.

Repair of Damages: The Contractor is responsible for all costs, repairs and replacements resulting from any damage to known or unknown buried structures/utilities, overhead structures/utilities, buildings, sidewalks, driveways or other items at residential properties and the repository due to Contractor's actions. If utilities or structures are damaged during excavation, the Contractor shall thoroughly document each instance, include the incident in the Monthly Report, and the Contractor shall be responsible for repair and replacement of the lost service. Repairs shall be made in accordance with applicable city, county or specific community requirements, codes and regulations by a contractor who is a professional in the applicable field (electrical, plumbing, septic system, concrete/asphalt, carpentry, etc.), and carry all required licensing and certifications to install, modify or repair, at the expense of the Contractor. **Note that if Contractor actions cause damage to a utility, the Contractor shall be required to repair the utility and ensure that it meets code at no cost to the EPA.**

Timely Response to Property Issues: The Contractor shall be available to respond to time-critical issues at properties in which the actions of the Contractor have caused issues, including but not limited to: flooding inside a home, clogged sewage system or drain lines, access issues due to equipment blocking ingress/egress pathways, etc. During the period of performance of this task order, the Contractor shall respond to such issues immediately as they arise or as soon as reported by a homeowner or tenant, including holidays, nights and weekends. Additionally, the Contractor shall provide timely updates to property owners where work has been scheduled or initiated. The EPA recognizes that delays due to weather, equipment and personnel issues will occur, but it is the responsibility of the contractor to keep the affected property owners and the EPA informed of the issues and revised timelines to complete work at any given property.

Potential for naturally occurring lead: Naturally occurring lead ores may be found at the bedrock interface and in undisturbed clay soil near the surface of some properties. The presence of a high density of galena crystals in soil or unconsolidated rock in undisturbed soil may be an indicator of the presence of naturally occurring lead ores. When these conditions are encountered, the Contractor shall immediately contact the EPA for further instruction.

5.3.3 Task 10 – Final Determination of Area and Volume Excavated

The contractor shall complete a post-excavation, As-Built Site Sketch for the property excavated to determine the final area in square feet (SF) of the remediation zone for billing purposes **prior to backfill being placed**. The final area determination will be matched with the following category table:

Property Category	1*	2	3	4	5
Area in Square Feet (SF)	≤ 1,000 SF	1,001 – 4,000 SF	4,001 – 10,000 SF	10,001 – 20,000 SF	> 20,000 SF

***Note that more than 75% of the properties in Category 1 (less than or equal to 1,000 SF) may not be suitable for motorized equipment use or may require mini or sub-compact equipment due to limited access or space to maneuver. Many of these properties will likely require hand-operated tools and equipment.**

The surface area of lead-contaminated soil removed shall be included in the post-excavation As-Built Site Sketches as measured by the EPA/ETS and confirmed by both the Contractor and the EPA. The measurements by the Contractor and the ETS shall agree within three percent (3%) of the total area; where a discrepancy of greater than three percent is encountered, the Contractor and ETS shall resolve the

discrepancy through discussion or contact the EPA for reconciliation.

The post excavation, As-Built Site Sketch may be based on the original field sheet if the original sketch of the property is a scaled drawing. If the original site sketch is not a scaled drawing, the Contractor shall measure and complete a scaled, post-excavation As-Built Site Sketch. The As-Built shall include the full calculation determining the final square footage of soil excavated in each lift within the property boundary for billing purposes. The final As-Built Site Sketch shall also include any features or changes to the property that were not included in the original field sheet. Refer to Section 5.4.2 for additional documentation requirements.

5.3.4 Task 11 – Transportation, Disposal and Consolidation

The Contractor and any subcontractor personnel, including all truck drivers, shall drive responsibly. This includes, but is not limited to, obeying all traffic and transportation laws, yielding to pedestrians, driving in a manner such that the trucks do not lose contaminated material and driving trucks within the acceptable, and any posted, weight restrictions for both the trucks and roads. All trucks, whether owned or subcontracted, are subject to load verification without advance notice by the EPA or other state and local authorities to evaluate compliance with load limits and road agreements. The Contractor shall also minimize truck roadside idling while waiting to be loaded and slow/no speed steering. The Contractor shall provide the EPA COR a Truck List with weight limits and capacities for all trucks (owned, subcontracted and/or added to the fleet) used by the Contractor for remedial activities during the duration of the Contract.

The Contractor shall be responsible for hauling and off-loading excavated, contaminated soil at the repository. The approximate location of the repository is shown in Enclosure M: Soil Repository Location. The EPA and its contractors are authorized to dispose of remediation waste at the repository. Physical access to the repository shall be maintained by the Contractor. At a minimum, this shall consist of maintaining the entrance gate(s) and any fencing/barriers which restricts unauthorized and/or off-duty access to the repository, as well as maintenance of the roadways within the Repository and at the entrances/exits. A truck washing station shall be required at the soil repository to allow continued operation during non-ideal conditions. Trucks shall not be allowed to operate if the potential for cross-contamination and/or tracking contaminated soil or tailings out of the repository exists.

Only contaminated residential soil which includes chat and the source material described in this PWS and supporting documents shall be disposed of at the repository by the Contractor. The Contractor shall not dispose of any other solid or hazardous waste/substance at the repository, including debris from residential properties. The Contractor shall not allow any of its subcontractors or vendors to dispose of any other solid or hazardous waste/substance or debris at the repository. The Contractor shall track the weight or volume of materials brought to the repository. For the purpose of conversion of excavated material, the standard of 1.3 tons of excavated material weight per one cubic yard of volume will be used unless otherwise agreed to in writing by both the EPA CO and COR.

The Contractor shall commit trucks and equipment to either the contaminated part of the operation (i.e., transport and disposal of contaminated soil/gravel) or the backfill part of the operation (i.e., hauling clean backfill, topsoil, and gravel to residential properties) and ensure no cross-contamination occurs. In select cases and only when the on-site EPA Representative provides prior approval, the Contractor may switch a truck or equipment from handling contaminated material to handling clean material. In this situation, the Contractor shall decontaminate the trucks by performing a wet wash at the designated repository, so no visual evidence of material is present and ensure that no contamination leaves the repository. The Contractor shall document the decontamination procedures used and photograph the truck or equipment

before and after decontamination. Equipment transferred between contaminated sites can be decontaminated by dry wash (brushing, scrubbing) prior to being removed from the Site by the Contractor, if site conditions allow. The Contractor shall be held responsible for tracking material out of the established work zone and repository due to improper decontamination of equipment. The Contractor shall be responsible for the management of waste generated by the decontamination in a manner consistent with local, state and federal regulations as well as the site-specific HASP. Trucks used for the transportation of contaminated material shall not be released from duty unless fully decontaminated and shall be parked in a controlled facility during non-work hours. That controlled parking area shall be subject to sampling and potential decontamination by the Contractor at the conclusion of the contract at the discretion of the EPA.

The Contractor shall not exacerbate contamination at residential properties, on roadways, or at the soil repository. For example, when wet site conditions exist, the Contractor shall prevent mud from being tracked off residential properties and onto roads. Typically, work stoppage is the measure that has been implemented to address these conditions. Dry decontamination of equipment is not possible or acceptable in wet and muddy conditions. The EPA has the explicit authority pursuant to this PWS to stop truck traffic at the worksite or repository due to mud tracking onto any roads. This is considered to be a suspension of a particular activity and not a stop work and is therefore, not subject to submission of a claim. The Contractor shall eliminate any mud, soil or mine waste tracking onto roads prior to resuming work. Excavation of areas contaminated as a result of tracking at a residential property due to wet and muddy conditions shall not be credited toward the total square footage remediated for that property.

The Contractor shall cover all truck beds when hauling material during all transport time on roadways. Trucks hauling contaminated material shall proceed directly to the repository to off-load on the established routes and shall not deviate from these routes. Activities prohibited for trucks loaded with contaminated material include, but are not limited to, stopping for lunch, running errands, and other non-emergency activities. The Contractor shall immediately address any spillage of soil by physically removing and properly disposing of such spillage associated with the use of trucks and/or heavy equipment. Water or other rinsing agents shall not be used to aid in the removal of spilled material. Areas where spilled material is removed shall be swept clean prior to departure. The Contractor shall ensure that roadways, alleys, and other public access areas are not “tracked” with soil or mine waste from the excavation or soil repository areas. The Contractor shall manage excavations such that trucks can load on undisturbed ground. Trucks hauling clean backfill shall operate in clean areas only and shall not back into lead-contaminated material; otherwise, thorough decontamination shall be required.

5.3.5 Task 12 – Backfilling, Backfill Quality and Grading

The Contractor shall be responsible for locating and sampling suitable backfill sources. The Missouri Inventory of Mining Occurrences and Prospects Database can be found at the Missouri Spatial Data Information Service (<http://msdis.missouri.edu/>) to help guide in the selection of a backfill source. Many sources of information exist on the history of mining in southeast Missouri, one of which can be found at <http://pubs.usgs.gov/sir/2008/5140/pdf/Chapter1.pdf>. Additionally, the EPA has identified the Big River watershed in Jefferson County and upstream portions in mining impacted areas as a continuous source of lead contamination, which indicates that these areas are not suitable for obtaining backfill.

The Contractor shall provide the EPA and the ETS access to all potential and accepted backfill sources. Backfill sources and sampling methods shall be included in the UFP-QAPP for approval by the EPA prior to using the backfill. Site sketches of the backfill source area with GPS reference points are required. Physical markers and GPS located points detailing sample areas at the backfill source area are also a requirement. Additionally, the Contractor shall follow storm water protection regulations and obtain necessary permits with regard to the backfill sources.

All excavations shall be backfilled with non-contaminated backfill materials, topsoil and gravel that exhibit at least the following characteristics:

1. Contains less than 100 ppm average lead;
2. Contains less than 22 ppm average arsenic;
3. Contains less than 25 ppm average cadmium;
4. Contains less than 1,800 ppm average manganese;
5. Contains no other contaminants at concentrations that pose a risk to human health and the environment (i.e., below residential soil screening levels found at the following web address: <https://www.epa.gov/risk/regional-screening-levels-rsls-generic-tables-november-2017>);
6. Topsoil shall be demonstrated to be of sufficient quality to produce heavy growths of grass and sustain vegetable gardens as verified by appropriate nutrient, chemical, and physical soil testing (for more information see <http://soilplantlab.missouri.edu/> and ASTM D5268 - 07 Standard Specification for Topsoil Used for Landscaping Purposes). The Contractor shall perform, at a minimum, analysis for the following parameters:
 - Regular analysis: pH, Na, OM, Bray I-P, Ca, Mg, K
 - Particle size analysis (percent sand, silt, clay)/ soil texture
 - Electrical Conductivity
 - Sodium Absorption Ration

(Analysis cost can be found at <http://soilplantlab.missouri.edu/soil/testfees.aspx>)

Depending on the backfill source chosen by the Contractor and the results of the soil quality testing, the Contractor shall follow the recommendations for soil treatment provided by these tests or, if soil amendments cannot improve the quality, the Contractor shall locate a more suitable backfill source. Soil quality testing results and amendment recommendations shall be submitted to the EPA and approved prior to use;

7. Topsoil furnished by the Contractor shall consist of a natural friable surface soil and shall be reasonably free from roots, hard clay, coarse gravel, stones larger than 1/4 inch in any dimension, noxious weeds, tall grass, brush, sticks, stubble, refuse or other material which would be detrimental to the proper development of vegetative growth.

The EPA will not accept backfill or topsoil that does not meet these requirements. The EPA will not accept or pay for work accomplished using backfill or topsoil that does not meet these requirements. The Contractor shall not use subsoil unless treatment with amendments can produce material that can be demonstrated to meet the requirements above. A minimum of six (6) inches of topsoil is required for all areas excavated at residential properties; all garden areas require the use of topsoil to the full depth of the excavation.

The Contractor shall ensure all equipment used to haul clean material is free of contaminated material. The EPA has access and authority at any time to inspect or sample trucks used for hauling clean backfill (soil, gravel, etc.) for lead contamination while the truck is performing the transport of clean backfill under this task.

The Contractor shall ensure adequate compaction of soil for use during this task to prevent unacceptable future settlement. The Contractor shall not place backfill in excavations containing snow, ice, or standing water. The Contractor shall accomplish placement of backfill in a manner that provides positive drainage away from all buildings. The Contractor shall not be responsible for correcting significant pre-existing drainage problems through extensive grading and backfilling; however, it is the Contractor's responsibility to sufficiently document pre-existing conditions, and failure to do so shall result in the Contractor being responsible for correcting drainage problems. Prior to re-vegetating or placing gravel,

the surface of the backfill shall be visually inspected by the EPA/ETS on-site representative and the Contractor for gradation control. The final grade of soil shall be brought to that of existing terrain or previously existing grade unless otherwise approved by the EPA and property owner. Once the backfilled property is properly graded based on the inspection, the Contractor shall proceed with re-vegetation or gravel placement.

The specific size of aggregate to be used is somewhat dependent on the size of aggregate used on the original surface. The objective is to construct a gravel surface that will be at least as resistant to erosion and rutting as the original surface. Replacement gravel for driveways, garage floors, walkways, parking areas and other previously graveled areas shall consist of two types of crushed limestone: the sub-grade and the surface. For level surfaces such as relatively level driveways, garage floors, parking areas and sidewalks where erosion is not likely to occur, the size range shall be appropriate for its intended use. At a minimum, the Contractor shall backfill the top one foot of excavation areas with the two types of crushed limestone noted above. To determine the appropriate size, the Contractor shall use the size of the aggregate on the original surface as a guideline. In general, it is anticipated that walkways and relatively level surfaces shall be constructed of 1-inch minus material in the sub-grade and 1-inch clean on the top layer. For driveways that have a steeper grade or other features where erosion is evident, the sub-grade shall consist of gravel that is 1-inch minus and shall be of a thickness that allows for sufficient compaction to avoid intrusion of any underlying soil into the sub-grade material during use. The Contractor shall then place a minimum of 2 inches of 1-inch clean limestone aggregates on the surface. Steeper driveways may require 2-inch minus aggregate in the sub-grade and 2-inch clean aggregate on the surface. The specific size may deviate from this specification if the slope of the driveway or the size of the gravel that was on the original surface indicate a different size will be more resistant to erosion. However, the aggregate shall not be so large that it presents a tripping hazard after compaction. **The approval of the EPA CO is required for any deviation from the 1-inch aggregate size.** All aggregate shall be derived from a non-lead bearing geologic unit. The Contractor shall compact the gravel so that it does not rut from automobile traffic or heavy rain events. The Contractor shall be responsible for maintaining the gravel driveway for a period of 120 calendar days after final placement, grading and compaction at each respective property. The final grade of gravel shall be brought to that of existing terrain or previously existing grade unless otherwise approved by the EPA and property owner. The Contractor shall demonstrate that the soil and gravel sources meet the backfill requirements as noted above in this task in bullets 1 through 7. Borrow source samples shall be collected for every ¼ acre at the borrow source area or 400 cubic yards loaded out to determine acceptable use for residential settings in a manner approved by the EPA in the UFP-QAPP. All sample collections shall be in compliance with the approved UFP-QAPP.

The Contractor shall be fully responsible for removal and replacement of any backfill material placed that is not in compliance with the backfill requirements listed above at no cost to the EPA. Further, backfill is not considered complete until final grading and compaction is finished. Backfill is required to be complete within 21 days of excavation start.

The overall guiding principle for backfill is “like for like.” In instances where the homeowner would prefer another material – for example, gravel in place of soil – the Contractor may choose, at no cost to the EPA, to make such replacements, but shall follow the guidelines for agreements made with property owners under Sections 3.3.4 and 3.3.6.

The Contractor shall be responsible for maintaining yards that have been backfilled and are awaiting re-vegetation, including but not limited to, implementing BMPs for erosion control, weed control, etc. Temporary walkways to enable access from driveways to home entrances shall be provided while yards are excavated and awaiting backfill and/or lawn establishment. Sidewalks, driveways and roads shall be kept free of dirt, mud, and debris during the excavation and until/while lawns are being re-established. The Contractor shall employ BMPs until a property is fully restored as verified during the close-out

inspection by the EPA and the property owner. The Contractor shall promptly repair and, if necessary, upgrade any breached or non-working erosion control measure. The Contractor shall remove all BMPs such as silt fence and straw bales after lawns have been established, as approved by the EPA. The Contractor shall restore a property to final grade within 21 calendar days after starting the excavation.

5.3.6 Task 13 – Lawn Restoration

The Contractor shall ensure quality lawn restoration for each backfilled residential property and shall provide materials, equipment and labor necessary such that restoration activities result in final ground surfaces that are smooth and allow for adequate drainage and lawns that are adequately revegetated. The Contractor shall confirm the soil quality and prepare a final surface that will be firm enough to prevent ruts made by sodding/seeding equipment but will be loose, crumbly and granular enough so that sod/seed can easily take to the top quarter-inch of soil.

Sod placement shall be implemented at remediated residential properties for up to one-quarter acre (10,890 square feet) with the permission of the landowner. The EPA CO or COR may authorize, in writing, placement of more than one-quarter acre of sod under the following conditions:

- Locations with a high risk of erosion;
- In areas where evidence of pre-existing sod is present;
- In areas with pre-existing Zoysia grass;

Note: The EPA CO or COR written approval is required prior to placement of more than 10,890 square feet of sod at a property.

In properties requiring greater than one-quarter acre of revegetation, hydro seeding shall be performed in the area beyond one-quarter acre by the Contractor in backfilled and disturbed areas at residential properties. Hydro seeding shall generally follow current business standards and practices. All materials and seed utilized shall be from a certified source. The Contractor shall hydro-seed based on the following minimum standards per acre unless another standard is approved in advance by the EPA:

Item	Rate/Acre
K31 Fescue	436 lbs.
Annual Rye	44 lbs.
Hydro seeding Mulch	4000 lbs.

Fertilizer/lime shall be applied at residential properties based on the backfill nutrient test results and the nitrogen/phosphorous/potassium ratio recommended for the specified seed mix. Some suggestions are located on the University of Missouri-Extension Website located at <http://extension.missouri.edu/main/DisplayCategory.aspx?C=64>. The Contractor shall determine appropriate seeding and sod windows to meet growth requirements for property closeout.

Recommendations can be found at <http://extension.missouri.edu/main/DisplayCategory.aspx?C=64>, but ultimately the contractor is responsible for determining when seeding and/or sodding is appropriate. The Contractor shall employ BMPs at residential properties to prevent erosion and maintain the backfill and seed. The Contractor shall replace and re-grade any lost backfill due to erosion prior to or during the re-vegetation period.

Alternate ground cover and seed mixes may be used in order to stabilize steep slopes where grass

sod/hydro seeding is impractical in establishing vegetation. Alternate ground cover and seed mixes shall not be permitted unless both the EPA and the property owner have given their prior written approval. If alternate ground cover is used, the Contractor shall also use approved erosion control measures.

The Contractor shall be responsible for maintaining the revegetated lawns at residential properties for a period of 120 calendar days after sodding/hydro seeding/revegetating has taken place. However, *NO* days during the winter shutdown period of December 16 through February 28, (see Section 3.1 Project Management) will count toward the 120-calendar day warranty period for revegetation due to growth dormancy of grass and other plantings. The warranty period daily count will resume on March 1st. Should the sod/seed fail during the warranty, the 120-day warranty period shall reset upon re-sod/seed work completion. Historically the contractor has used a written agreement with each residential property owner detailing the care and maintenance requirements and expectations during the pre-excavation site walk. For more information on lawn establishment, care and maintenance, please refer to the following website: <http://extension.missouri.edu/p/G6700>. At a maximum of 30 calendar days after sodding/hydro seeding, the Contractor shall inspect yards to observe and photo document the conditions of the revegetated areas at each respective property. The EPA will determine when the property is adequately revegetated based on a satisfactory cover of living grass and when no sign of vegetation gaps larger than 9 square inches (3 inches by 3 inches) is visible at residential properties. The Contractor shall revegetate portions of yards where the EPA determines that revegetating is required.

Where Zoysia or other warm season grass has been removed for remedial activities, the Contractor shall replace the Zoysia or other warm season grass and shall be responsible for maintaining it for 120 days. Warm season grasses, such as Zoysia, have a longer winter dormant period that will not count toward the 120 day maintenance period. This dormant state shall be from October 1 through May 1 (<http://heartlandturffarms.com/meyer-zoysia-sod-st-louis/>). It is unknown how many properties eligible for cleanup under this contract have Zoysia grass. Unlike typical hydro seeding and sodding, the Contractor may elect to establish Zoysia in the backfilled yard under a separate timeline to accommodate the unique growing season requirements for Zoysia. A reference on planting and maintaining Zoysia grass is included on the University of Missouri-Extension website at: <http://extension.missouri.edu/publications/DisplayPub.aspx?P=G6706>.

Depending on weather conditions, new sod/seed may require up to four (4) watering events per day until rooting/germination and up to two (2) watering events per day until the lawn is established. Generally, established lawns will require at least one (1) inch of water per week but, under all circumstances, the watering rate shall be limited to no more than ½ (0.5) inch of water per hour.

The Contractor shall be responsible for watering the lawns within one (1) hour of sod/seed placement. The Contractor shall provide timers, hoses and sprinklers at all properties where sod/seed have been applied or provide an alternate water source where the available water supply is insufficient to provide the required watering (private wells). The Contractor shall be responsible for monitoring the temporary irrigation equipment or alternate supply and ensuring it is being used properly and providing adequate water for establishing the new lawn. The Contractor shall compensate the property owner for any additional cost in their water utility as a result of lawn irrigation, where applicable. This is typically accomplished by averaging three months water bills prior to irrigation starting and compensating the property owner for the difference between the average water bill and the increased cost after irrigation begins.

5.3.7 Task 14 – Landscaping

The Contractor shall ensure quality landscaping for each backfilled residential property. Unless otherwise indicated by the landowner and approved by the on-site EPA representative with a written agreement

signed by the Contractor, the landowner, and the EPA, the Contractor shall restore residential properties to pre-excavation conditions, including landscaping. As stated previously, the guiding principle for replacement is “like for like,” and, therefore, in some instances the Contractor shall replace or restore mulch, decorative rock, etc., at residential properties unless otherwise approved by the EPA and property owner in writing. If any approved pre-excavation agreement exists, the Contractor shall restore areas according to the pre-excavation agreement. All pre-excavation agreements shall be obtained in writing and contain property owner signatures. Pre-excavation agreements shall be included with the property folder and available to the EPA upon request. Please note that pre-excavation agreements do not excuse the Contractor from their obligation in meeting all requirements of the PWS unless approved by the EPA CO via modification of the contract.

The Contractor shall obtain COR approval prior to incurring landscaping expense, if a Landscape cost is greater than \$1,000. The COR or Alternate COR (in the absence of the COR) may give verbal approval over the phone, followed up by a written email within five (5) calendar days. When submitting the invoice, the contractor shall provide the receipts and invoices to justify the landscape costs so the COR can properly approve the invoice. In accordance with the FAR micro-purchase threshold, the contractor only needs to obtain 1 quote for an individual landscape cost up to \$10,000. However, if the COR reviews a quote that falls between \$1,001 and \$10,000 and it seems unreasonably high then the COR may require the contractor to obtain additional quotes, if the COR believes it's in the EPA's best interest. All landscape costs exceeding \$10,000 require 3 quotes for review and approval prior to incurring cost.

Costs for landscaping shall be billed to the Landscape line item in the Pricing Schedule. Landscaping includes actual costs for material and G&A ONLY for the installation of landscaping items. Any additional labor, including, but not limited to supervision, management, and delivery are NOT payable under the Landscape CLIN.

5.3.8 Task 15 – Replacement of Removed or Damaged Items

The Contractor shall be required to replace items (e.g., re-installing fences, gates, swing sets, etc.) removed in performance of work under this contract. Upon completion of the excavation, backfilling, and restoration, the Contractor shall be responsible for returning the property to pre-excavation conditions except for items removed by the property owner. If the items are not salvageable after remediation (e.g., broken fence posts, fences, etc.), the Contractor shall purchase comparable items acceptable to the property owner and reinstall these items. The Contractor shall repair all Contractor-caused property damage at no cost to EPA and before remedial activities are considered complete and close-out activities can be performed. The Contractor shall notify the EPA within one day after completing restoration efforts at a property.

5.3.9 Task 16 – Repair/Maintenance of Previously Remediated Properties

The Contractor shall repair or maintain remediated properties from previous contracts with outstanding or newly discovered issues at the direction of the EPA COR under the Previously Remediated line item. These may include but are not limited to minor grading, seeding, over-seeding, weed control, fertilizing, minor landscaping and minor repairs to underground pipe or cable. **Any repair and maintenance activities under this task shall be consistent with the requirements of this PWS unless otherwise approved by the EPA CO via modification of the contract.** The Contractor shall obtain prior approval from the EPA CO to proceed with repair/maintenance of previously remediated properties. The Contractor shall submit a work plan with estimated costs in advance of performing the work. All receipts for materials and expenditures shall be submitted in advance of invoicing as backup to the invoice and as part of the property file. In all cases, prior approval to proceed with repair/maintenance of previously remediated properties requires the EPA CO's approval to insure the work is neither an improvement nor results from pre-existing

conditions based on previously obtained documentation.

5.4 Post-Excavation Activities

5.4.1 Task 17 – Final Property Closeout Inspection

The Contractor shall schedule and perform a final property closeout inspection with the property owner and the EPA to discuss completed tasks and, in general, assess all restoration actions within ten working days of meeting the closeout criteria described below. With the exception of properties with sod/seed, properties may be closed out prior to the expiration of the 120-day warranty period if they meet all closeout requirements, but warranty period issues shall be addressed within the 120-calendar day period, as they come up, as described in the Contract and associated documents.

Properties with sod/seed may also be closed out prior to the 120-day warranty period (excluding the winter shutdown/dormancy period for lawn areas) but only after the sod/seed has rooted/germinated and no sooner than 40 days after sod/seed has been applied. The 120-day warranty still applies for early closeouts and the Contractor shall address warranty issues in this period as necessary.

The Contractor may be required to show the property owner the dated pre-excavation video and/or photographs to resolve any issues. During the final property closeout inspection, the Contractor shall conduct the following activities:

1. Inspect the completed remedial effort and ensure that it meets the Property Closeout form criteria (Enclosure J: Example Property Closeout Form).
2. Take sufficient dated photographic and video evidence of the completed property and the access location from the street to the property for a thorough comparison with the pre-excavation photographic/video evidence.
3. Obtain the property owner's signature on the Property Closeout Form where the property owner acknowledges that all restoration activities were adequately completed, and no damage was evident.
4. The EPA will approve the Contractor's property closeout request and sign the Property Closeout Form after verification that performance standards have been met.

If the EPA determines that property conditions warrant additional work to be performed, the property closeout request will not be approved until the Contractor has performed the work, at which point the EPA, after conducting another inspection and finding all performance standards are met, will approve the property closeout request by signing the Final Property Closeout Form. The Contractor shall attach the pre- and post-excavation site sketches to the signed Property Closeout Form and submit one copy to the EPA COR when the final payment is submitted for a property on an invoice. The Contractor shall keep a copy of all signed Property Closeout Forms and other property documents on site during the contract period. A completed Property Closeout Form does not exempt the Contractor from honoring the 120-day warranty period. Any issues arising within the warranty period attributed to the remedial work performed, regardless of prior signed Property Closeout forms, remain the responsibility of the Contractor.

5.4.2 Task 18 – Property Folder Submission

The Contractor shall submit property folders completed during the previous one-month period. Applicable documentation for each closed-out routine and non-routine property assignment shall be submitted in a property folder.

At a minimum, each property folder shall contain the following in this order:

1. **Transmittal Checklist** identifying each document in each individual property folder by its accurate name and by its chronological order in the folder, signed and dated by the Contractor's representative. This form shall include a signature block with space for the date of review by the EPA COR or an EPA representative.
2. **Brief Executive Summary** describing the general work completed, problems/issues encountered during the excavation, backfill or the final property close-out inspection including property owner concerns, unique findings that the EPA should be aware of, key milestone dates for the property such as completion of excavation, completion of backfill, and completion of revegetation, and any other relevant information concerning the particular property.
3. **Signed Access Agreements** for the property being remediated including any access agreements obtained for crossing onto adjacent properties.
4. **Site Sketch** of pre-excavation conditions on the property provided by the EPA pursuant to contract specifications.
5. **Property Pre-Excavation Inspection Checklist** signed by the property owner and the Contractor's representative responsible for pre-excavation site walks (**Item a.** below to be included here, as necessary) (Enclosure E: Example Property Pre-Excavation Inspection Checklist).
6. **Pre-Excavation Photographs and Video** including photographs in JPEG format and digital video clips in MPEG or WMV format on a DVD.
7. **Utility Clearances** including any documentation verifying all attempts to locate utilities.
8. **Post-Excavation Photographs and Video** taken immediately after excavation activities are complete, but before backfill begins, in JPEG format and digital video clips in MPEG or WMV format on a DVD.
9. **As-Built Site Sketch (Post Excavation Site Sketch)** which provides all information on the original property site sketch provided by the EPA (with the exception of the original sampling results) and includes: a legend, Contractor identification, date, final confirmation lead levels, final square footage and average depth of area excavated (see Section 5.3.3 Task 10 – Final Determination of Area and Volume Excavated), results of any additional characterization sampling performed, and areas exceeding cleanup criteria not remediated (**Item b.** below to be included here, as necessary). Areas where demarcation barriers are placed in the subsurface on the property shall be clearly identified. As-built site sketches shall be drawn to scale to determine the area remediated by the Contractor and confirmed by the EPA.
10. **Sampling and Confirmation Data** of all sampling data collected from the property including in-situ XRF readings and confirmation/verification sampling data/results. (This form will be provided for insertion by the EPA and/or the ETS.)
11. **Property Totals Report** which shall include a table with the square footage, depth and estimated number of tons or cubic yards of contaminated material removed from the property; the number of tons or cubic yards of each type (gravel, soil, etc.) of excavated material at the property; and the amount of each type of backfill material (in tons or cubic yards) used at each property.
12. **Final Photographs and Video** of the property taken after seeding to verify that the grass is growing, healthy, and adequately covers the ground as per closeout requirements, in JPEG format and digital video clips in MPEG or WMV format on a DVD.
13. **Property Closeout Form** (Enclosure J: Example Property Closeout Form) signed by the property owner and EPA representative.

Other documents that shall be included in the individual property folder, as needed or obtained, include but are not limited to:

- a. **Pre-Excavation Agreement Forms** (Enclosure F: Example Pre-Excavation Agreement Form) describe any agreements regarding excavation and restoration at the property made during the Pre-Excavation Site Walk between the property owner and the Contractor. This form shall be signed by both the Contractor's representative and the property owner. This form shall accompany the Property Pre-Excavation Inspection Checklist in item 5 above.
- b. **Areas Not Addressed Summary** describing portions of the property and circumstances where soils exceeding cleanup criteria were not remediated. This summary shall accompany the As-Built Site Sketch described in item 9 above and clearly identify such locations.
- c. **Property Owner Issues Forms** (Enclosure I: Example Property Owner Issues Form) signed by the Contractor's representative(s) who handled the issue(s).
- d. **Property Owner Repair Acceptance** document signed by both the Contractor's representative and the property owner showing follow-up actions regarding repairs to damages (e.g., concrete sidewalks, etc.) and/or replacement of items removed (e.g., shrubs and plants) are acceptable to the property owner. This document shall accompany the Property Owner Issues Forms.
- e. **Property Owner Satisfaction Survey Form** is a survey that captures the level of property owner satisfaction achieved after all remedial actions are completed. The survey shall be provided to property owners by the Contractor during the closeout site walk or may be left with the property owner along with a stamped envelope addressed to the EPA Region 7 Office. The property owner may complete the survey during the closeout site walk if the EPA is present, or they can mail it to the EPA at their convenience. The survey results shall be compiled at the end of each contract period and shall be used, along with the EPA COR's Contractor Performance Evaluation, to determine the eligibility for incentive payment (for more information, please see the Quality Assurance Surveillance Plan [QASP]).
- f. **Property Owner Settlement Form** (Enclosure L: Example Post-Excavation Settlement Agreement)

5.4.3 Task 19 – Annual Remedial Action Reports

The Contractor shall submit an Annual Remedial Action Report as described in Section 6 Deliverables.

5.4.4 Task 20 – Composite Samples for Backfill and Sod Quality

Each composite sample of the backfill soil, gravel or sod shall be collected from an area no greater than $\frac{1}{4}$ acre per sample (or 400 cubic yards of soil) and analyzed for the metals and other characteristics listed in Task 12 Backfill Quality and Grading. These samples shall be submitted to a National Environmental Laboratory Accreditation Program (NELAP)-accredited laboratory for analysis of metals in accordance with the Contractor-developed UFP-QAPP. The Contractor shall also submit soil quality testing, at the same frequency as metals analysis described above, to the University of Missouri Extension Soil and Plant Testing Laboratory for determination of nutrient and other amendment requirements. The laboratory readings for metals and soil quality shall be stored electronically and included in electronic format along with a hard copy (from the lab) in the appropriate reports, including the Monthly Reports and the Annual Remedial Action Reports. A scaled map shall be included with the analytical results showing the GPS located extent of the borrow area as well as the GPS coordinates for each sample collected. If multiple backfill or sod sources are used, the Contractor shall track which sources were used at each residential property.

5.5 Community Involvement and Communication

The Contractor has primary responsibility for addressing problems and complaints submitted by property owners and the general community within the scope of this PWS. Inquiries by the press shall be handled by the EPA's Office of Public Affairs. The PMP shall identify the Contractor's points of contact and responsibilities and describe how complaints or issues shall be handled. The Contractor shall direct all other

inquiries/concerns from state and local regulatory agencies to the EPA COR. The Contractor shall coordinate all field activities with city, county and state officials prior to performing work. The Contractor shall inform the EPA, to the extent possible, in advance of any media contact and in all cases, shall inform the EPA immediately following any media contact. The Contractor shall refer all media matters to the EPA and defer comments until such a time as the EPA can be made available for commenting.

6 DELIVERABLES

The Contractor shall submit the following deliverables in accordance with the schedule identified for each deliverable. See below and Enclosure D: Significant Project Deliverable Dates and Milestones. The EPA approval of all plans is required prior to receiving the Notice to Proceed and initiating on-site work.

- **Final Project Management Plan** - The draft Project Management Plan (PMP) is due with the proposal. The final PMP is due to the EPA COR within 15 calendar days of receipt of the EPA's comments on the draft – one electronic copy. This site-specific plan provides a description of how the project will be managed. This includes, but is not limited to, the approach used, and identifies: key personnel; the general schedule, including the timeline and number of properties the contractor expects to complete in monthly intervals; the resources required (to include the number of crews, number of personnel in each crew and labor categories, and equipment lists); the intended communication process with the EPA; the Contractor's points of contact and responsibilities; a description of how property owner complaints or issues will be handled; how the Contractor shall interact with the respective road authority and maintain the roads; when and how the Contractor will perform decontamination of vehicles and equipment to prevent cross-contamination; and when and how the Contractor shall employ dust suppression measures. The PMP shall also describe the protocols and methods that will be employed to ensure quality landscaping and establishment of lawn growth. A schedule to close out the contractor's obligations for each period of performance for the contract **must** be included and may need to be updated in advance of those obligations.

Note: The PMP is reviewed by the EPA only to ensure it meets the requirements of the contract and PWS. The PMP is a dynamic document that shall be updated as needed to reflect actual site conditions.

- **PMP Updates** – Updates to the PMP are due to the EPA COR within 10 calendar days of changes or EPA notification to Contractor on needed change. The Contractor shall update the PMP to reflect progress towards achievement of the performance objectives as necessary. The Contractor shall submit one electronic copy of PMP updates to the EPA COR.
- **Final Health and Safety Plan** - The draft Health and Safety Plan (HASP) is due to the EPA COR in electronic format within 30 calendar days of contract award. The final HASP is due to the EPA COR within 15 calendar days of receipt of the EPA's comments on the draft – one electronic copy. This plan outlines the health and safety requirements of the federal, state, and local laws and regulations, and shall meet the minimum requirements of OSHA 29 CFR 1910.120 and 29 CFR 1926.65. For specific information please consult the U.S. Department of Labor's Occupational Safety and Health Administration (OSHA) "A Fact Sheet for Hazardous Waste Operations and Emergency Response" located at: http://www.osha.gov/OshDoc/data_General_Facts/factsheet-hazardouswaste.pdf.
- **Final Quality Management Plan** – The draft Quality Management Plan (QMP) is due to the EPA COR in electronic format within 30 calendar days of contract award. The final QMP is due

to the EPA COR within 15 calendar days of receipt of the EPA's comments on the draft – one electronic copy. The QMP documents how an organization will plan, implement, and assess the effectiveness of its quality assurance and quality control operations. Specifically, it describes how an organization structures its quality system; the quality policies and procedures; areas of application; and roles, responsibilities and authorities. The elements of a quality system are documented in a QMP. The final QMP shall include the Contractor's approach to provide reproducible data from XRF screening and confirmation sampling. The plan shall be in accordance with the *EPA requirements for Quality Management Plans, EPA QA/R-2, March 2001* (<https://www.epa.gov/sites/production/files/2016-06/documents/r2-final.pdf>).

- **Final Uniform Federal Policy for Quality Assurance Project Plan (UFP-QAPP)** – The draft UFP-QAPP is due to the EPA COR in electronic format within 30 calendar days of contract award. The final UFP-QAPP is due to the EPA COR within 15 calendar days of receipt of the EPA's comments on the draft – one electronic copy. This site-specific plan shall describe how the Contractor will assure the quality of all work and products including, but not limited to the sampling of the backfill source, gravel, and sod. The plan shall follow the Uniform Federal Policy for Quality Assurance Project Plans, Version 1, March 2005, EPA document EPA-505-B-04-900A (https://www.epa.gov/sites/production/files/documents/ufp_qapp_v1_0305.pdf).
- **Final Storm Water Pollution Prevention Plan** – The draft Storm Water Pollution Prevention Plan (SWPPP) is due to the EPA COR in electronic format within 30 calendar days of contract award. The final SWPPP is due to the EPA COR within 15 calendar days of receipt of the EPA's comments on the draft – one electronic copy. This plan shall outline how the Contractor and its subcontractor(s) shall meet the storm water pollution prevention and management requirements of the federal, state and local laws, regulations, and other requirements, including the Clean Water Act, for both the residential properties and backfill/topsoil source locations. In general, a SWPPP is a site-specific, written document that identifies potential sources of storm water pollution at the construction site (residential properties and backfill source areas) and describes BMPs (Best Management Practices) to contain pollutants (sediment, soil, tailings, etc.) in storm water discharges from the residential properties and backfill source area(s). The SWPPP shall also document how the Contractor plans to ensure no tracking of material onto any road from residential properties and the repository. Two websites for guidance on storm water pollution prevention, management and SWPPPs are:
 - http://www.epa.gov/npdes/pubs/sw_swppp_guide.pdf
 - <http://nepis.epa.gov/Exe/ZyPURL.cgi?Dockey=2000469L.txt>

The final SWPPP shall be approved by the EPA prior to the Contractor starting field activities.

- **SWPPP Updates** – SWPPP updates are due to the EPA COR within 10 calendar days of receipt of the EPA's written notification indicating that the SWPPP requires updating. The Contractor shall update the SWPPP to reflect changes when an EPA representative determines it is needed. This will most likely be the result of a site inspection indicating that BMPs are ineffective or are not adequately maintained. The Contractor shall submit one electronic copy of the SWPPP update to the EPA COR.
- **Final Borrow Area Excavation and Restoration Plan (BAERP)** – The draft BAERP is due to the EPA COR in electronic format within 30 calendar days of contract award. The final BAERP is

due to the EPA COR within 15 calendar days of receipt of the EPA's comments on the draft – one electronic copy. This plan shall detail all restoration activities in conformance with accepted SWPPP management practices, regardless of whether the Contractor will manage the borrow area or if a sub-contractor will manage the borrow area.

- **Truck List** – The Contractor shall provide the EPA COR a Truck List in Microsoft Excel with weight limits and capacities for all trucks (owned, subcontracted and/or added to the fleet) used by the Contractor for remedial activities during the duration of the Contract. The required information includes the vehicle make, model, description (color, unique markings, etc.), US DOT number, VIN (Vehicle Identification Number), number of axels, distance in feet between the extremes of any group of two or more consecutive axels, identify the presence of a drop axel and state the maximum legal gross weight of the vehicle along with a copy of the cab card for each truck.
- **Road Agreements** - The Contractor shall establish a formal, written agreement with the relevant municipalities/communities regarding truck traffic. The agreement shall be signed by the respective community administrators and/or designated representatives, and the Contractor prior to commencing work at a property. The agreement shall clearly state that the Contractor is responsible for repair and/or reimbursement of damage resulting from negligent use of the roads for transportation purposes by the Contractor or the work the Contractor is performing.

The Contractor shall prepare and maintain dated photographic/video documentation of all transportation routes planned for use by trucks and other heavy equipment the Contractor plans to use prior to work in a given area. If after remediation, accusations of damage are made by a property owner, the city, county, or state, and no photographic/video documentation exists, or the quality of information doesn't allow the relevant parties to make a determination of fault, the Contractor shall make the necessary repairs at no cost to the EPA. Evaluation of road damage from pre-project to post-project asphalt road surface conditions shall be based on the *PASER, Asphalt Roads Manual* (WTIC, 2013), http://epdfiles.engr.wisc.edu/pdf_web_files/tic/manuals/asphalt-paser_02_rev13.pdf

The road agreement shall, at a minimum, include a Transportation Plan which defines primary haul routes to and from the repository and backfill source areas; identify road and bridge weight limits to help prevent road and bridge damage due to truck traffic; include a complete list of trucks being used (owned and subcontracted) with stated legal weight limits and capacity; a detailed description of dust suppression methods, and include a detailed plan to provide for repair or reimbursement to the respective jurisdiction(s) for such repair with timelines for repair/reimbursement. The Contractor shall comply with all load limits on roads used and provide documentation to the EPA COR and county/municipalities of any situation that requires these limits to be exceeded.

Road agreements shall be finalized, and a signed copy submitted to both the EPA CO and COR prior to commencing work at a property.

- **Monthly Report** – The Contractor shall submit Monthly Reports electronically to the EPA COR (Enclosure G: Example Format of Monthly Reports). At a minimum, this report shall identify the monthly and cumulative number of properties excavated, backfilled, restored, and signed-off by the property owners. It shall also include the square footage of areas remediated, the number of truckloads and cubic yards of contaminated material removed from each property that period, the estimated cubic yards of each type (gravel, soil, etc.) of excavated material at each property, and

the amount of each type of backfill material (estimated in cubic yards for soil and tonnage or cubic yards for gravel) used at each property. The report shall also provide monthly and cumulative totals for the number of properties closed out (after successful final inspection by the EPA) and the number of properties under a 120-day warranty period. The report shall identify the estimated amount of contaminated soil and gravel in tons or cubic yards taken to the soil repository cumulatively both by year and over the life of the contract. The report shall document problems encountered and resolved, media contacts, property owner complaints, unique findings of which the EPA should be made aware, and other relevant information. The report shall identify all roads used during the reporting period by trucks going to and from the soil repository. The report shall also include the number of employees in each labor category (i.e., equipment operator, truck driver, laborer, foreman, etc.) during the reporting period. The Monthly Report shall consist of the work scheduled one month in advance of the current operations. The detailed plans shall include a list of upcoming yards to be opened, excavated and restored (those in which final grade has been achieved, seeded, etc.), and if there are any anticipated issues that may be encountered in the upcoming reporting period. The report shall also identify all work performed at the repository, including but not limited to maintenance of soils transported and any pre-excavation, excavation or post-excavation construction, maintenance or repairs completed. Monthly reports shall be submitted electronically to the EPA COR before close of business on Monday prior to the 1st Tuesday of every month after the start of remediation activities. Completed property folders, for those properties completed during the previous month, shall be submitted to the EPA in hard copy at each Monthly Project Meeting or at a mutually agreeable time should the monthly meeting be cancelled.

- **Final Annual Remedial Action Report** – The draft Annual Remedial Action Report is due to the EPA COR electronically within 30 calendar days after each Period of Performance end-date as specified in the contract. The report shall describe all work completed under the applicable contract period to date as well as any issues of which the EPA should be aware. The report shall address all aspects of the work conducted and shall include a table or spreadsheet that shows the properties where work has been completed, the EPA ID number for each property and the dates of tasks started and completed. The Draft Annual Remedial Action Report shall also include the electronic versions of the As-Built Site Sketch for each completed property on a CD. The draft Annual Remedial Action Report shall also include property folders for all properties not previously submitted during that Period of Performance. The final Annual Remedial Action Report, with attachments, shall be submitted to the EPA no later than 20 calendar days after receipt of EPA's comments on the draft—one electronic copy.
- **Justification for Receipt of Incentive Award** – This documentation shall provide all necessary documentation to support the award of contract incentives. The Contractor shall submit the documentation to the EPA COR within 45 calendar days after the expiration of each contract period as specified in the contract. The report shall include the basis for expense inclusion and all supporting documentation (see Note at the bottom of the QASP for definitions of eligible expenses and documentation).
- **Property Folders** –Property folders shall contain all items listed in Section 5.4.2 for each property. The Contractor shall provide completed property folders for all properties completed during the previous month in hard copy to the EPA COR at the Monthly Project Meeting for EPA review. Any activities taking place after property closeout but within the 120-day warranty period shall be submitted as an addendum to each respective property folder.

7 REFERENCES

WTIC, 2013. Wisconsin Transportation Information Center. *Pavement Surface Evaluation and Rating, PASER, Asphalt Roads Manual*.

USDA, 1998. U.S. Department of Agriculture, Natural Resources Conservation Service. *Estimating Soil Moisture by Feel and Appearance*. Program Aid Number 1619, April 1998.

US EPA, 2016. U.S. Environmental Protection Agency. (accessed February 15, 2017). *Regional Screening Levels (RSLs) Generic Tables May 2016*. <https://www.epa.gov/risk/regional-screening-levels-rsls-generic-tables-may-2016>

US EPA, 2012. U.S. Environmental Protection Agency, Region 7. *Record of Decision, OUI-Residential Properties Southwest Jefferson County Mine Site, Jefferson County, Missouri*. September 2012.

US EPA, 2005. U.S. Environmental Protection Agency, Office of Solid Waste and Emergency Response. *UFP-QAPP Manual*. EPA-505-B-04-900A. March 2005.

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8 ENCLOSURES

ENCLOSURE A: KEY TERMS

Chat: Sand to gravel-sized material resulting from the crushing, grinding, and dry separation of the ore material. For this remedial action, chat is often found in old asphalt, gravel driveways, under or around foundations, or as fill.

Closeout: The process of formally completing the remediation of a property to the satisfaction of both the EPA and home-owner in accordance with all conditions of the PWS.

Closeout Attempt: The process of contacting the property owner to determine if the completion of all remedial activities have been completed to the satisfaction of both the EPA and the home owner in accordance with all conditions of the PWS.

Closed Property: A property that has been remediated and meets all conditions of the PWS acceptable to the EPA and property owner through the final completion of a closeout site walk, in addition to formal concurrence signatures by the EPA, the Contractor, and the property owner on an EPA-approved closeout form. This completes the final payment phase for payment to the contractor.

Composite soil sample: Soil testing method used where several aliquots of soil are physically mixed into a larger combined sample. In general, individual samples which are composited shall be the same size or volume and the composite sample shall be completely mixed. Composite sampling can be useful for estimating mean concentration of a substance for a given area and, if appropriate, compositing can result in substantial cost savings compared to analyzing individual (i.e. discreet) samples.

Comprehensive Environmental Response, Compensation and Liability Act (CERCLA): A federal law passed in 1980 and modified in 1986 by the Superfund Amendments and Reauthorization Act (SARA). These acts created a special tax that went into a trust fund, commonly known as the Superfund, to investigate and clean up abandoned or uncontrolled hazardous waste sites. Under the program, the EPA can either: (1) pay for site cleanup when parties responsible for the contamination cannot be located or are unwilling or unable to perform the work, or (2) take legal action to force parties responsible for site contamination to clean up the site or pay back the federal government for the cost of the cleanup.

Drip zone: A drip zone is an area around the painted exterior walls of a house or structure that receives the majority of the rain runoff from the house or structure. Drip zones may vary in size from structure to structure and can only be identified through actual field inspection. The drip zone is generally located within 6 to 30 inches from the exterior walls of the house or structure and are typically defined during sampling activities.

Backfill Complete: The first of two payment phases, all soil has been previously removed from a property requiring remediation, confirmation sampling is complete, required barriers have been placed and any contamination left in place at the acceptance of the EPA and property owner has been documented, the approved backfill has been placed, compacted, graded to the

final level and prepared for sod/seed.

National Contingency Plan (NCP): The federal regulation that guides the Superfund program.

National Priorities List (NPL): The NPL is the list of national priorities among the known releases or threatened releases of hazardous substances, pollutants, or contaminants throughout the United States and its territories. The NPL is intended primarily to guide the EPA in determining which sites warrant further investigation.

Open Property: A property with any location, part or whole, that is not backfilled.

Quadrant or Cell: The designated area or portion of a property sampled to determine the average lead concentration in soil.

Quadrant or Cell Sample: A composite surface soil sample collected from a designated area or portion of a property; refers to samples collected both during the assessment (pre-excavation) and remediation (post-excavation) of a residential property.

Record of Decision (ROD): The ROD is a public document that explains which cleanup alternatives will be used to clean up a Superfund site. The ROD for sites listed on the NPL is created from information generated during the Remedial Investigation/Feasibility Study (RI/FS). A ROD contains site history, site description, site characteristics, community participation, enforcement activities, past and present activities, contaminated media, the contaminants present, scope and role of response action and the remedy selected for cleanup.

Remedial Action: The actual construction or implementation phase of a Superfund site cleanup.

Remedial Investigation/Feasibility Study (RI/FS): Determines the nature and extent of contamination. Assesses the treatability of site contamination and evaluates the potential performance and cost of treatment technologies.

Residential property: Any area with high accessibility to sensitive populations, including properties containing single-and multi-family dwellings, apartment complexes, vacant lots in residential areas, schools, day-care centers, community centers, playgrounds, parks, green ways, and any other areas where children may be exposed to site-related contaminated media.

Sensitive populations: Young children (those 6 years [72 months] of age and younger who are most vulnerable to lead poisoning), nursing and pregnant women.

Tailings: Fine-grained, typically sand- and silt-sized, material resulting from the wet washing or floatation separation of crushed ore material.

ENCLOSURE B: LIST OF PROPERTIES SUBJECT TO REMEDIATION

Please note: Properties in bold are the highest priority due to presence of children. Additional access will be obtained by the EPA during the first year of remediation. EPA will add/remove properties as needed.

Properties estimated to be less than 1,000 square feet (N=35)

ID	House #	Street	Town	Children < 7
3000	711	KENNETT ST	DESOTO	Y
2819	4344	SILVER SPRINGS RD	BONNE TERRE	Y
12204	1420	COACHLITE DR	DESOTO	Y
3050	3280	ECHO LAKE DR	BYRNES MILL	Y
3295	1100	S 5TH ST	DESOTO	Y
2590	301	W MINERAL ST	DESOTO	Y
3515	3707	HIGHLAND TRACE CT	HOUSE SPRINGS	Y
2894	6674	DEERWOOD DR	CEDAR HILL	Y
11350	6046	PEACHTREE DR	HILLSBORO	Y
3054	1118	S 4TH ST	DESOTO	Y
2952	101	POPLAR	DESOTO	Y
3285	1319	N 7TH ST	DESOTO	Y
3383	607	PERRY ST	DESOTO	Y
3512	6446	MILL VIEW DR	HOUSE SPRINGS	Y
11694	4910	WHITEHEAD RD	HILLSBORO	
2715	101	VINELAND SCHOOL RD	DESOTO	
3254	508	S 2ND ST	DESOTO	
2765	736 B	AMVETS DR	DESOTO	
3094	3835	THELMA DR	DESOTO	
2681	219	N 10TH ST	DESOTO	
2727	320	JEFFERSON ST	DESOTO	
2437	304	DONNELLY ST	DESOTO	
3479	807	W MILLER ST	DESOTO	
2547	1137	S 3RD ST	DESOTO	
2657	223	N 3RD ST	DESOTO	
3310	2120	MEADOW BROOK DR	DESOTO	
3351	111	E 2ND ST	DESOTO	
3558	3790	S LAKESHORE DR	HOUSE SPRINGS	
2857	4903	CHARBOND DR	DESOTO	
3146	7300	LAKESHORE DR	CEDAR HILL	
12299	905	DEWITT ST	DESOTO	
3211	1209	N 3RD ST	DESOTO	
3472	1101	EASTON ST	DESOTO	
3200	1401	W KELLEY ST	DESOTO	

3437	808 & 810	W KELLEY ST	DESOTO	
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Properties estimated to be 1,001 to 4,000 square feet (N=58)

ID	House #	Street	Town	Children < 7
2958	112	N 4TH ST	DESOTO	Y
3180	600	S 2ND ST	DESOTO	Y
2493	210	S 5TH ST	DESOTO	Y
3088	516	MARGARET ST	DESOTO	Y
3219	723	N 4TH ST	DESOTO	Y
12247	506	BLOW ST	DESOTO	Y
3451	718	CEDAR ST	DESOTO	Y
2834	804	S 2ND ST	DESOTO	Y
3213	1212	N 3RD ST	DESOTO	Y
3188	806	N 4TH ST	DESOTO	Y
2691	414	N 7TH ST	DESOTO	Y
3391	165	ECHO LAKE CIRCLE	BYRNES MILL	Y
3224	126	ECHO LAKE CIRCLE	EUREKA	Y
3316	912	W KELLEY ST	DESOTO	Y
3435	1412	COACHLITE DR	DESOTO	Y
3370	1405	ROCK RD	DESOTO	Y
2963	803	W KELLEY ST	DESOTO	Y
3495	118	N ADAMS ST	FESTUS	Y
3570	6318	N LAKESHORE DR	HOUSE SPRINGS	Y
2458	317	N 7TH ST	DESOTO	Y
3478	9548	RIDGE RD	DITTMER	Y
5342	9373	PEA RIDGE DRIVE	HILLSBORO	Y
3496	7485	DITTMER RD	DITTMER	Y
2229	98	N LAKE DR	HILLSBORO	Y
3261	204	S 3RD ST	DESOTO	
3097	3929	ZELL CR	DESOTO	
2323	716	S 2ND ST	DESOTO	
3434	1608	RONNY DR	DESOTO	
3424	602	S 5TH ST	DESOTO	
3238	206	S 3RD ST	DESOTO	
3334	604	W PRATT ST	DESOTO	
2758	617	W KELLEY ST	DESOTO	
3314	321	JEFFERSON ST	DESOTO	
5183	4335	CENTER DRIVE	DESOTO	
3404	803	W MILLER ST	DESOTO	
2953	208	S 4TH ST	DESOTO	
3103	14219	EASY ST	DESOTO	
3176	721	S 3RD ST	DESOTO	
3475	318	STEWART ST	DESOTO	

2905	100	E 3RD ST	DESOTO	
2776	1203	N 2ND ST	DESOTO	
3331	804	ROCK RD	DESOTO	
3281	1141	N 7TH ST	DESOTO	
2334	512	CEDAR ST	DESOTO	
2927	708	S 3RD ST	DESOTO	
3340	707	W PRATT ST	DESOTO	
2934	300	BOYD ST	DESOTO	
2443	720	S 4TH ST	DESOTO	
3223	804	N 3RD ST	DESOTO	
2327	1004	S 2ND ST	DESOTO	
2884	510	W MINERAL ST	DESOTO	
12207	513	S SECOND ST	DESOTO	
2380	403	E ST LOUIS ST	DESOTO	
3313	203	S THOMAS AVE	DESOTO	
11351	9958	COLUMN DR	HILLSBORO	
2522	302	N 7TH ST	DESOTO	
2917	800	S 2ND ST	DESOTO	
12430	612	W PRATT ST	DESOTO	

Properties estimated to be 4,001 to 10,000 square feet (N=44)

ID	House #	Street	Town	Children < 7
3385	5118	STATE RD Y	DESOTO	Y
3242	804	N 2ND ST	DESOTO	Y
3397	300	STEWART ST	DESOTO	Y
11268	12	TULLAHOMA DR	HILLSBORO	Y
11749	304	S FOURTH ST	DESOTO	Y
3348	512	S 5TH ST	DESOTO	Y
3092	4107	OLD STATE RD	DESOTO	Y
5322	8034	LAKESHORE DRIVE	CEDAR HILL	Y
3510	6424	MILL VIEW DR	HOUSE SPRINGS	Y
3522	6420	MILL VIEW DR	HOUSE SPRINGS	Y
3159	919	N 7TH ST	DESOTO	Y
3438	416	E STONE ST	DESOTO	Y
583	12629	KIMES RD	DESOTO	Y
3290	1010	S 3RD ST	DESOTO	Y
3036	3100	PAINTED HORSE DR	BYRNES MILL	Y
3276	1860	DEER CREEK DR	DESOTO	Y
3389	807	S 2ND ST	DESOTO	
3461	606	S 2ND ST	DESOTO	
12232	1614	ESSEX HEIGHTS DR	DESOTO	
2429	817	N 2ND ST	DESOTO	
3122	222	N 2ND ST	DESOTO	

3108	1315	ROCK RD	DESOTO	
3210	1202	N 2ND ST	DESOTO	
3265	1210	ROCK RD	DESOTO	
2922	106	E 3RD ST	DESOTO	
3372	708	W PRATT ST	DESOTO	
3142	7859	EVERGREEN DR	CEDAR HILL	
3448	502	S 2ND ST	DESOTO	
2930	1602	ESSEX HEIGHTS	DESOTO	
2622	306	S 3RD ST	DESOTO	
3207	200	S 3RD ST	DESOTO	
3492	512	N 10TH ST	DESOTO	
3634	14809	SOUTH LAKE DR	DESOTO	
3347	700	ESSEX ST	DESOTO	
3105	14278	S LAKE DR	DESOTO	
12280	702	S FIFTH ST	DESOTO	
3256	102	S 4TH ST	DESOTO	
2925	443	JOHNSTON	DESOTO	
3307	812	BOYD ST	DESOTO	
3301	1501	COACHLITE DR	DESOTO	
2452	709	N 5TH ST	DESOTO	
2073	856	WHITNEY CIRCLE	HERCULANEUM	
3490	8106	CANNON HOLLER RD	DITTMER	
2599	817	N 3RD ST	DESOTO	

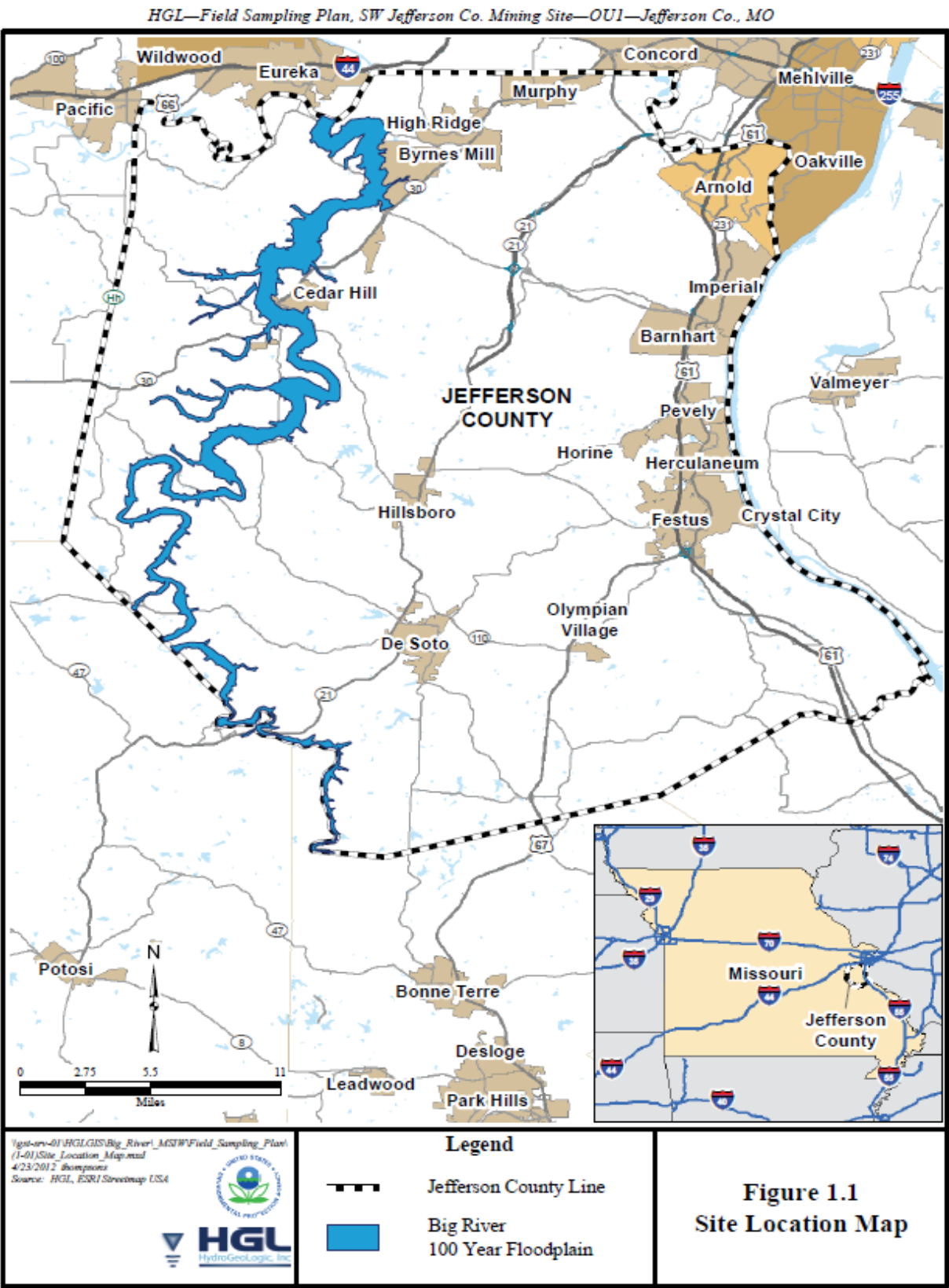
Properties estimated to be 10,001 to 20,000 square feet (N=11)

ID	House #	Street	Town	Children < 7
2749	510	LUEKING DR	DESOTO	Y
3155	615	W PRATT ST	DESOTO	
3152	408	S 5TH ST	DESOTO	
2568	221	SCENIC HILL DR	DESOTO	
3328	604	N WASHINGTON ST	DESOTO	
12277	1074	LOVETT ST	DESOTO	
3264	4866	STATE RD Y	DESOTO	
3124	3759	DOROTHY DR	DESOTO	
3481	1319	W KELLEY ST	DESOTO	
10198	5231	DUTCH CREEK RD	CEDAR HILL	
2785	1326	ROCK RD	DESOTO	

Properties estimated to be greater than 20,000 square feet (N=2)

ID	House #	Street	Town	Children < 7
3505	217	W LAKESHORE DR	DESOTO	
2512	1162	BRICKYARD RD	HILLSBORO	

ENCLOSURE C: SITE LOCATION MAP



ENCLOSURE D: SIGNIFICANT PROJECT DELIVERABLE DATES AND MILESTONES

Significant Project Schedules and Dates		
Description	Start	End
Fieldwork Time	7:00 AM	6:00 PM
Fieldwork Days	Monday	Saturday
Excavation Season	March 1st	November 25 th
Backfill Deadline	Start of excavation	21 calendar days after excavation start and no later than December 15th* to end the season.
Lawn Maintenance, Inspection & Watering	End of sod/seeding	120 calendar days after sod/seeding is completed
Draft Project Management Plan (PMP)	Due with proposal	
Draft Health and Safety Plan (HASP), Quality Management Plan (QMP), Uniform Federal Policy for Quality Assurance Project Plan (UFP-QAPP), Storm Water Pollution Prevention Plan (SWPPP), and Borrow Area Excavation and Restoration Plan (BAERP)	Submitted electronically to the Contracting Officer Representative (COR) within 30 calendar days of contract award	
Final PMP, HASP, QMP, UFP-QAPP, SWPPP, and BAERP	Submitted electronically to the COR 15 calendar days after receipt of the EPA comments on drafts	
Final Road Agreements	Submitted electronically to the EPA CO and COR prior to commencing work at a property	
Current Training Certificates for Key Personnel	Within 30 calendar days of contract award, or upon request to change key personnel	
PMP Updates	Submitted electronically to the COR within 10 calendar days of change or EPA notification to Contractor on needed change	
SWPPP Updates	Submitted electronically to the COR within 10 calendar days after the EPA notification to Contractor	
Daily Reports	Submitted electronically to the COR by noon the following work day	
Monthly Reports	Submitted electronically to the COR on the 1 st Monday prior to the Monthly Project Meetings	
Monthly Project Meetings	1 st Tuesday of every month after the start of construction	
Property Folders	Monthly Project Meetings, after Final Property Closeout has been completed	
Draft Annual Remedial Action Report	Submitted electronically to the COR 30 calendar days after completion of field work for each contract period	
Final Annual Remedial Action Report	Submitted electronically to the COR 20 calendar days after receipt of the EPA comments on draft	
Incentive Justification	Submitted electronically to the COR 45 calendar days after the end of each contract period	

*Time is of the essence for backfilling after excavation and shall be completed with acceptable quality material within 21 calendar days after each excavation start. All excavated properties shall be backfilled by December 15th. Excavation in any location where water lines are present shall be backfilled immediately to prevent water lines from freezing.

ENCLOSURE E: EXAMPLE PROPERTY PRE-EXCAVATION INSPECTION CHECKLIST

JEFFERSON COUNTY LEAD DISTRICT SUPERFUND SITES PROPERTY PRE-EXCAVATION INSPECTION CHECKLIST

To be completed at the time of the Pre-Excavation Site Walk. Photo documentation and any additional notes or information are also required to support the documentation in this checklist.

 PROPERTY ID NUMBER

 PROPERTY OWNER

 ADDRESS

 DATE

Property (Yard) Access (check one, see comments):

☐ Approved by Property Owner
 ☐ Denied by Property Owner

	OK	NA	PROBLEM/CONDITION
YARD AREA			
1. Lawn Area			
A. Location of Flower/Plant Boxes			
B. Soil (grade) next to house			
C. Shrubbery			
D. Trees			
E. Low areas near house (that could cause ponding of water)			
F. Fences and gates			
G. Other (Dogs, livestock, etc.):			
2. Utilities			
A. Water			
B. Gas			
C. Electric			
D. Communications (phone/internet)			
E. Sewer			
F. Other			

3. Driveway	OK	NA	PROBLEM/CONDITION
A. Concrete cracked, damaged			
B. Blacktop cracked, damaged			
C. Uneven Settling			
D. Other:			
4. Sidewalks and Walkways			
A. Concrete cracked, eroded			
B. Tripping hazards			
C. Tree roots cracking, lifting slab			
D. Sections missing			
E. Other:			
5. Garage/outbuildings			
A. Settlement cracks in walls			
B. Concrete floor slab cracked or damaged			
C. Door jambs damaged, rotted			
D. Door hard to open, close			
E. Other:			
6. Swimming Pool (Above Ground)			
A. Leakage			
B. Visible Damage			
C. Other:			
7. Swimming Pool (Below Ground)			
A. Leakage			
B. Visible Damage			
C. Other:			
8. Storm Cellar			
A. Damaged			
B. Indication of Flooding			
C. Other:			

9. Electrical Service	OK	NA	PROBLEM/CONDITION
A. Damaged circuit breaker panel box			
B. Wiring hanging outside			
C. Damaged electric meter			
D. Other:			
EXTERIOR HOUSE AREA			
10. Exterior Wall (circle)			
BRICK SIDING			
OTHER:			
A. Brick bulging, spalling, cracking			
B. Mortar loose, needs repointing			
C. Lintel needs repair			
D. Stucco bulging, cracking			
E. Siding dented, damaged			
F. Finish wearing off siding			
G. Siding loose, not level, missing			
H. Siding rotted, possible presence of termites or other pests.			
I. Composite shingles worn, broken, or missing			
J. Windows damaged			
K. Other:			
11. Gutters and Leaders			
A. Copper discolored, greenish, damaged			
B. Galvanized rusted, patched			
C. Fascia board rotted, damaged, Patched			
D. Drain onto foundation wall			
E. Need to divert water from wall			
F. Soffit venting (circle): Yes No			
G. Concrete slab cracked, deteriorated			

11. Gutters and Leaders (cont.)	OK	NA	PROBLEM/CONDITION
H. Concrete slab/splash block needed			
I. Other:			
12. Entrance Steps			
A. Concrete cracked			
B. Brick cracked, mortar loose			
C. Structurally sound			
D. Handrail			
E. Other:			
13. Exterior Doors			
A. Damaged			
B. Opens/closes freely			
C. Weather-stripping			
D. Trim rotted, missing			
E. Jambs rotted, damaged			
F. Frame separation from walls			
G. Other:			

ADDITIONAL COMMENTS:

 CONTRACTOR REPRESENTATIVE SIGNATURE

 DATE

 PROPERTY OWNER SIGNATURE

 DATE

ENCLOSURE F: EXAMPLE PRE-EXCAVATION AGREEMENT FORM

Property ID: _____ **Site Name:** _____

Property Address: _____

Agreement Number: _____ **Agreement Date/Time:** _____

Issue/Concern: _____

Agreed Solution Between Contractor and Owner: _____

Contractor's Information:	Property Owner Information:
Printed Name & Date: _____	_____
Signature: _____	_____
Phone Number: _____	_____

ENCLOSURE G: EXAMPLE FORMAT OF MONTHLY REPORTS

1.0 INTRODUCTION

2.0 MONTHLY OVERVIEW

3.0 SUMMARY OF MONTHLY AND CUMULATIVE ACTIVITIES

4.0 SUMMARY OF ACTIVITY BY PROPERTY

5.0 ROADS USED BY TRUCKS GOING TO AND FROM THE SOIL REPOSITORY

6.0 CONTRACTOR SITE PERSONNEL

7.0 PROBLEM AREAS ENCOUNTERED, AND CORRECTIVE ACTIONS TAKEN

8.0 MEDIA CONTACTS

9.0 CITIZEN COMPLAINTS AND RESPONSE/ACTIONS TAKEN

10.0 UNIQUE FINDINGS

11.0 OTHER RELEVANT INFORMATION

12.0 FUTURE WORK PLANNED / SUMMARY OF ON-GOING PROJECTS

13.0 DAILY REPORTS COMPILATION

14.0 ENCLOSURES

ENCLOSURE H: EXAMPLE DAILY REPORT

DAILY REPORT		DATE:		
CONTRACT NUMBER		PROJECT/LOCATION		REPORT NUMBER
CONTRACTOR (PRIME OR SUBCONTRACTOR)			NAME OF SUPERINTENDENT OR FOREMAN	
WEATHER – A.M. WEATHER – P.M.			TEMPERATURE – A.M. TEMPERATURE – P.M.	
PRIME CONTRACTOR AND OR/SUBCONTRACTOR WORKFORCE				
NUMBER	TRADE	HRS	EMPLOYER	LOCATION/ACTIVITY
MATERIAL ON-SITE			EQUIPMENT ON-SITE (TYPE, USAGE, REPAIR STATUS)	
SAFETY VIOLATIONS			CORRECTIVE ACTIONS	
RESULTS OF QC INPECTIONS				
ATTACHED DOCUMENTS (cubic yard totals, complaint forms, etc.)				
REMARKS				
*The EPA requires the Contractor to submit a compilation of the daily reports as part of the Monthly report.				
CTR SUPERINTENDENT:			EPA COR:	

ENCLOSURE I: EXAMPLE PROPERTY OWNER ISSUES FORM

Date: _____ **Property ID:** _____ **Site Name:** _____

Property Address: _____

Complaint Number: _____ **Complaint Date/Time:** _____

Property Owner Information:

Printed Name: _____

Signature: _____

Phone Number: _____

Issue/Concern (include date): _____

Suggested Solution: _____

Action Taken by Contractor: _____

Contractor’s Information:

Homeowner’s Information:

Printed Name:

Printed Name:

Signature:

Signature:

Date: _____

Date: _____

ENCLOSURE J: EXAMPLE PROPERTY CLOSEOUT FORM

Site Name: _____

Property Address: _____

Owner's Name: _____ Property ID #: _____

Date: _____ Time: _____ Areas Excavated: _____

Contractor/Rep. Name: _____

Excavation, General Info	Yes	No	N/A
1. Were the correct area(s) excavated and restored?			
2. Were the correct area(s) of drip zone excavated and restored?			
Grading, Hydroseeding and Vegetation			
1. Does the grading around the perimeter of the house in excavated areas generally slope away from the house?			
2. Has restoration included seed/sod, gravel, and/or landscaping completion in all areas that were excavated?			
3. Does the grass appear to be germinating (for seed) and growing (for seed and sod)?			
4. Are bare spots greater than 9 square inches visible in the grass areas?			
5. Are the restored areas generally firm and evenly graded?			
6. Are the structures (house foundation, porch, sidewalks, etc.) free from hydroseeding overspray, mud and dirt?			
7. Was the property graded such that water will not pool on the property?			
8. Was damage to landscaping or plant materials avoided?			
Gates, Fences and Retaining Walls			
1. Do gates open and close freely?			
2. Were all gates or fences removed during restoration reinstalled to their original state?			
3. Was damage to the gates or fences avoided?			
4. Was damage to retaining walls avoided?			
Foundation, Siding, Gutters, Utilities, Outbuildings and Sheds			
1. Was damage to the siding and trim avoided?			
2. Was damage to the foundation avoided?			

3. Was damage to windows, doors, and screens avoided?			
4. Was damage to gutters, downspouts, downspout extensions and other drainage structures avoided?			
5. Was damage to utilities and air conditioning units avoided?			
6. Was damage to outbuildings and sheds avoided?			
Sidewalks and Driveways (Concrete or Asphalt)			
1. Was damage to driveway surfaces avoided?			
2. Was damage to walkway surfaces avoided?			

Please attach pre- and post-excavation field sheets and photos

Owner's Comments:

Inspection Notes:

As the owner of _____, I acknowledge that all restoration work was completed appropriately and satisfactorily, and no damage remains beyond any settlement agreements with the contractor:

Property Owner: _____ **Date:** _____

All excavation, transportation, disposal, backfilling, landscaping, restoration activities and repairs and/or settlements are complete:

Contractor: _____

EPA Representative: _____

Date: _____

Date: _____

ENCLOSURE K: EXAMPLE PROPERTY OWNER SATISFACTION SURVEY

The purpose of this form is to reflect the Contractor’s performance based on the Property Owner’s point of view. The EPA regards customer satisfaction as a very important task and will use these forms as one of the tools to measure the performance of the Contractor.

Site Name and Property ID: _____

Excavation Start Date: _____

Excavation Finish Date: _____

Backfill Start Date: _____

Backfill Finish (with final topsoil and grading) Date: _____

Revegetation Start Date: _____

Date of Property Closeout: _____

Please answer **YES** or **NO** on the following questions:

- 1) The Contractor promoted good behavior on the job site:
- 2) The Contractor performed the work while being mindful of my personal property:
- 3) The Contractor performed the work in a timely manner:

Please write a short statement summarizing the Contractor’s performance:

On the following scale, please rank the Contractor’s Overall Performance (circle):

1 – poor 2 – acceptable 3 – good 4 – very good 5 – exceptional

Signature of Property Owner: _____ Date: _____

Printed Name: _____

ENCLOSURE L: EXAMPLE POST-EXCAVATION SETTLEMENT AGREEMENT

Site Name and Property ID: _____

Property Address: _____

Settlement Number: _____ **Settlement Date/Time:** _____

Issue/Concern: _____

Agreed Settlement Between Contractor and Owner: _____

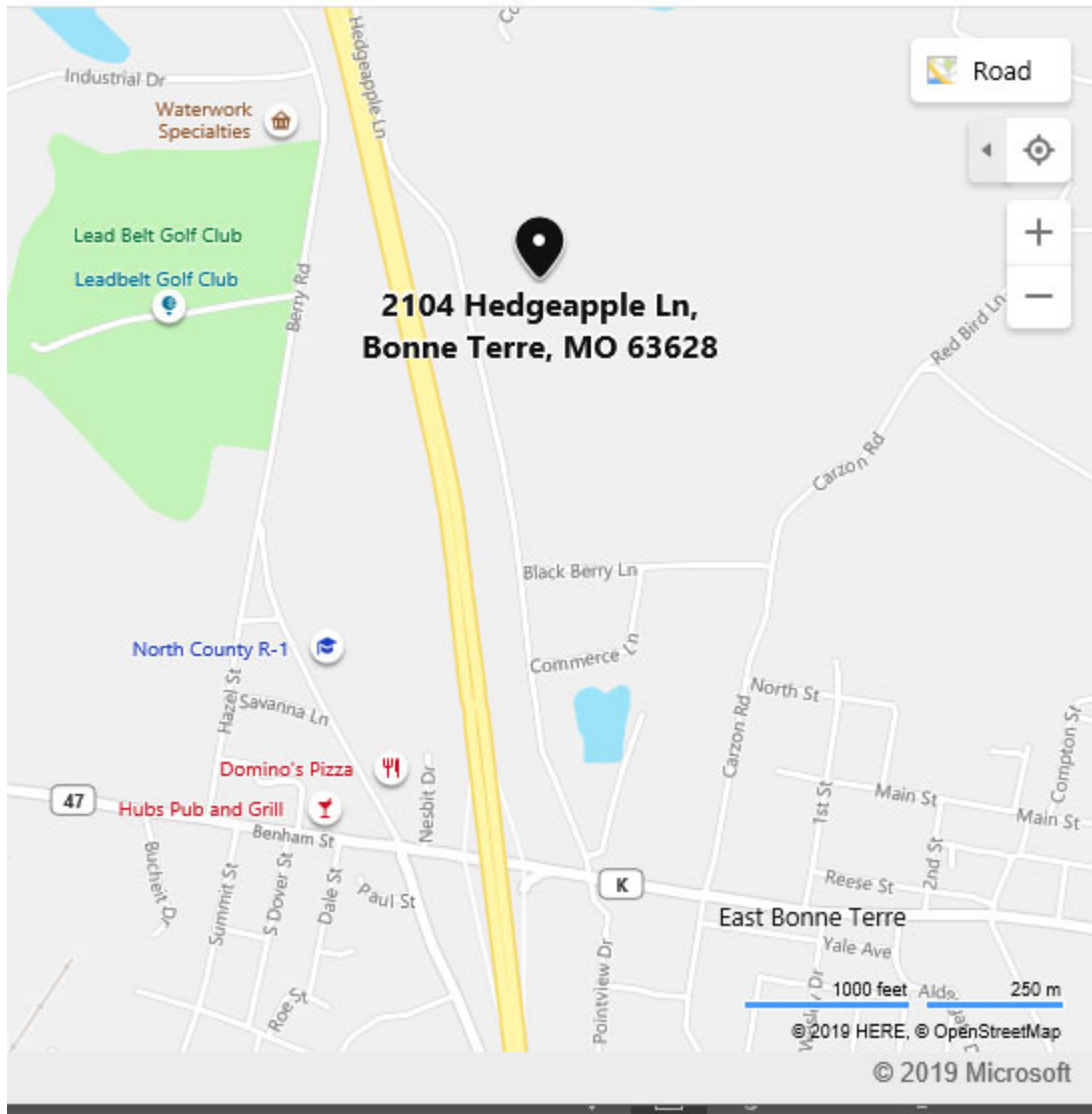
Contractor’s Information:

Printed Name & Date: _____
Signature: _____
Phone Number: _____

Property Owner Information:

ENCLOSURE M: SOIL REPOSITORY LOCATION

Approximate coordinates of the point below: 37.931595, -90.537478



Enclosure N: Soil Repository Access Agreement

Big River Mine Site OU1 – Residential Yard Cleanup Access Agreement

RIGHT OF ENTRY TO PREMISES

James Bess, Grantor, as legal owner with authority to permit access to the below described property, hereby knowingly consents to and authorizes the United States Environmental Protection Agency (USEPA) or its authorized representatives (Grantees), to enter and perform certain environmental response activities upon the following described premises:

Description: Address

(See attached General Warranty Deed)

ENVIRONMENTAL RESPONSE ACTIONS

The environmental response actions to be performed on said property may include the following activities:

- a. Movement and hauling of equipment and machinery over said property in preparation for and in the course of conducting environmental response actions at the property;
- b. Hauling of lead and metals contaminated soils/rock over said property;
- c. Hauling of clean materials (i.e. soil and rock) over said property needed for restoration of impacted areas;
- d. Storage of lead and metal contaminated soil/rock only on areas that are previously contaminated with lead and metals; and
- e. Treatment of lead and metal contaminated soil/rock only on areas that are previously contaminated with lead and metals.

AGREEMENT NOT TO INTERFERE

The Grantor agrees not to interfere or tamper with any of the activities or work done, or the equipment used to perform the activities, or to undertake any actions regarding the use of said property which would tend to endanger the health or welfare of the Grantees or the environment, or to allow others to use the property in such a manner, during the term of this Agreement.

RESTORATION OF PROPERTY

Grantor agrees that it may be necessary to upgrade portions of the property in order to accommodate truck and equipment traffic. This may include the cutting or removal of trees and other vegetation. This may also include the adding of rock to said property to support heavy truck and equipment traffic and the installation of gates to secure entry to the property. Grantor also agrees that any vegetation cut or removed will be left on said property.

Grantee agrees to limit the amount of vegetation cut or removed to only that necessary to access said property in order to perform said environmental response actions. Grantee also agrees to

limit the amount of rock used to only that amount necessary to support trucks and heavy equipment. Grantee will place materials in a method which would not prevent future use as a playing field and will cover the lead bearing soils with uncontaminated soils to a depth not to exceed 12 inches. Grantee will also hydro-seed the area with appropriate grass seed and fertilizer.

The Grantee agrees that in cooperation with the Grantor, the portions of the property used will be restored as nearly as possible to its original state and condition as found immediately preceding the beginning of activities authorized by this Agreement, following completion of the environmental response activities or Grantee will leave as is, if Grantor so desires. Grantee will not replace any vegetation damaged, cut, or removed during this action.

LIMITATION OF LIABILITY

USEPA's liability for damages to the property or injuries to persons which result from or are caused by the activities on the property shall be to the extent permitted by the Federal Tort Claims Act, and the Federal Employee's Compensation Act, 28 U.S.C. §2671, et. seq., 5 U.S.C. §8101 et. seq., and 31 U.S.C. §3701 et. seq.

TERM

Upon completion of the environmental response activities, all rights and privileges given by the Grantor shall cease on that date, unless extended by subsequent agreement. The activities undertaken pursuant to the terms of this Agreement are subject to the availability of funds. This agreement shall not be deemed a contract between USEPA or its authorized representatives.

I have read the foregoing document and understand that it is an agreement granting permission to the USEPA or its authorized representatives to enter the above described premises for purpose of conducting environmental response activities, and I agree to its terms and conditions.

GRANTOR:

By:

Signature

Date

Printed Name: JAMES BESS

U.S. ENVIRONMENTAL PROTECTION AGENCY:

By:

Signature

Date

Printed Name: Jason Gunter